24 HEALTH AND SAFETY

24.1 INTRODUCTION

This chapter examines the existing community values for community health and safety and the potential health and safety implications for the construction, operational and post-mining phases of the Wandoan Coal Project (the Project). The process for identifying the health and safety risks associated with the Project is also described. The necessary controls to minimise risks to the health and safety of mine personnel and to the community have been established for the key Project hazards identified.

24.2 METHODOLOGY OF ASSESSMENT

24.2.1 METHODOLOGY

The potentially affected populations (including the workforce, contractors and the community) have been identified as part of the environmental assessment process.

The elements of the Project have been examined to identify those that potentially have health and safety implications for the construction and operational workforce, as well as the community. Other studies included in this environmental impact statement have also been considered in order to identify aspects of the Project that also potentially pose a risk to health and safety. The results of consultation with the community (see Chapter 4) and local and regional health service providers and agencies have also been used to identify relevant issues.

More detail on specific issues can also be found in the following chapters of this EIS:

- Chapter 13 Air quality
- Chapter 15 Noise
- Chapter 16 Vibration
- Chapter 21 Social
- Chapter 23 Hazard and risk.

Because occupational health and safety issues affecting a workforce are generally well understood and well managed under the workplace health and safety legislation and codes of practice applicable to the mining industry, this assessment does not discuss in detail the occupational health and safety issues except where they might differ significantly from normal industry risks or require specific management strategies for effective control.

Health issues are generally taken to refer to longer term or chronic health issues, whereas safety issues are taken to refer to more acute issues relating to single incidents. However, there is considerable crossover between these categories.

24.2.2 LEGISLATION

The principal legislative requirements that will apply to the Project that are relevant to health and safety are:

- workplace health and safety legislation

- dangerous goods legislation which ensures that dangerous goods are handled, stored and used safely.

The relevant legislation and corresponding requirements are listed below:

- *Coal Mining Safety and Health Act 1999 (Regulation 2001)*
- *Workplace Health and Safety Act 1995*
- *Explosives Act 1999*
- *Dangerous Goods Safety Management Act 2001*
- *Radiation Safety Act 1999*
- *Petroleum and Gas (Production and Safety) Act 2004.*

Relevant guidelines under these Acts have also been considered.

The health and safety of persons potentially affected by a coal mining operation is regulated under the *Coal Mining Safety and Health Act 1999* (CMSHA). Construction and operation of a coal mine is subject to the CMSHA where work undertaken is:

- related principally for, or in connection with, the process of winning coal and
- is on the mining lease or on land contiguous with the mining lease.

The CSMHA does not apply to activities undertaken on land that is not contiguous to a mining lease, or on land that is contiguous with the mining lease where the activity is declared under Section 10(2) of the CMSHA not to be an 'on-site activity'. The health and safety of workers on other parts of the Project (being off-site activities) is regulated by the *Workplace Health and Safety Act 1995*.

The *Explosives Act 1999* and associated regulations establish the requirements for handling, storage, transport and manufacture of explosives. The Australian Standard AS 2187: Explosives — Storage, Transport and Use is called up by the Coal Mining Safety and Health Regulations 2001.

The *Dangerous Goods Safety Management Act 2001* (DGSMA) does not apply to the construction and operation of the mine. Section 3 of the DGSMA explicitly states that the Act does not apply to coal mines to which the CMSHA applies. The DGSMA is relevant to all other parts of the Project that are not contiguous with the mining lease, and to certain other parts of the Project despite them being contiguous with the mining lease if under s10(2) of the CMSHA they involve activities that are declared not to be 'on-site activities'.

The *Radiation Safety Act 1999* and associated regulations provides for the control generally of sources of ionising radiation and harmful non-ionising radiation. This Act establishes the requirements for handling radioactive substances, such as sources used for testing welds or in measuring instruments associated with the Project, and the monitoring of persons who may be exposed to the hazard.

The objectives of the *Petroleum and Gas (Production and Safety) Act 2004* provide for, amongst other things, the regulation and promotion of the safety of persons in relation to operating plant (which would include the proposed gas supply pipeline and the gas-fired power station contemplated by the Project).

The process to achieve compliance with the above legislation is outlined in the following sections.

24.2.3 WANDOAN JOINT VENTURE HEALTH AND SAFETY POLICY

The WJV has developed a Sustainable Development (SD) Management System to ensure compliance with the relevant legislation to ensure the health and safety of mine personnel, contractors and site visitors as well as to protect the environment and the community. A copy of the Policy is attached in Appendix 1-1-V1.4.

24.2.4 WJV HEALTH AND SAFETY MANAGEMENT SYSTEM

The CMSHA requires that the safety and health system for a coal mine must be auditable and include the organisational structure, planning requirements, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining a safety and health policy. A safety and health management system for a coal mine must incorporate risk management elements and practices that ensure the safety and health of persons who will be affected by coal mining operations under section 62 of the CMSHA.

When the WJV SD system is implemented at the Project site level, the Project will have processes in place to meet the relevant legislative and corporate requirements.

24.3 EXISTING ENVIRONMENT

The existing environment in the vicinity of the Project area is characterised by predominantly rural activities, with small communities and scattered rural residences present. The Wandoan township is located immediately to the east of the Mining Lease Application (MLA) area. Residents are served by small-scale health facilities. A detailed demographic profile of the local population comprising those sections of the population including children and the elderly that are especially sensitive to environmental health factors, is presented and discussed in Chapter 21 Social.

There is a single general medical practitioner who works in Wandoan two days per week and also provides public outpatient services at the Wandoan Outpatients Clinic on those days. The clinic also provides a range of community health services. More extensive health services are provided in Miles (64 km to the south) and Taroom (56 km to the north). Toowoomba and Rockhampton provide full hospital facilities.

An ambulance station staffed by a single officer is located in Wandoan. There are also ambulance stations located at Taroom (staffed by two officers) and at Miles (staffed by four officers).

The Project will aim to ensure that there is no deterioration in the general level of health within the local community, and that the range and extent of health facilities are expanded in line with the extra demand that the Project will generate. This will be achieved through consultation and close cooperation with Queensland Health, the Queensland Ambulance Service, local health providers and through the community consultation reference group.

The risks associated with the need for long–distance travel between the scattered residences and communities in rural areas are expected to be a significant feature of the existing health and safety environment in the region.

24.4 DESCRIPTION OF PROPOSED DEVELOPMENT

Relevant aspects of the Project that could impact on the health and safety of the workforce or on the community if not appropriately managed include:

Construction phase:

- transport of personnel, equipment and materials to and from site
- clearing vegetation and stripping topsoil
- transport, storage and use of dangerous goods on-site
- construction of mine buildings, accommodation facilities and infrastructure including the rail spur
- construction of the water management system
- dragline assembly
- construction of the gas pipeline and optionally an on-site gas fired power station
- upgrade of the Wandoan waste water treatment plant and the potable water treatment plant
- construction and relocation of roads
- transport of regulated waste off-site
- plant and equipment commissioning
- equipment maintenance.

Operational phase:

- transport of mine personnel, equipment and materials to and from site
- transport, storage and use of dangerous goods on-site
- ongoing clearing of vegetation, stripping topsoil and removal of overburden
- open-cut mining operations including blasting
- coal washing
- transport of waste off-site
- sewerage treatment
- equipment maintenance
- on-site power generation option
- other support operations.

Decommissioning and post-mining phase:

Once mining operations have exhausted the economic coal reserves within the proposed Mining Leases (MLs), the Project will undergo a remediation program and the infrastructure will be decommissioned. Activities undertaken at that time will include:

- making final voids safe
- reshaping remaining spoil dumps to achieve the final agreed landform
- applying agreed remediation measures such as shaping, top soiling and revegetating remaining areas
- managing the site's water balance and any potential discharges of water from the site

- demolishing and removing mine infrastructure from the site, including conveyors, coal handling and preparation plant (CHPP) equipment and structures, coal loadout systems, rail spur, the optional on-site gas fired power station (if constructed) and associated gas supply pipeline, the airstrip, and potable water and sewerage pipelines to the Wandoan Township plants.

Negotiations will be undertaken with government and landowners at the time to determine which infrastructure will ultimately be kept and which infrastructure will be decommissioned and removed.

24.5 POTENTIAL IMPACTS

The focus of this section is on the implications of the Project regarding health and safety, workforce and community values. This section provides detail on occupational health and safety issues for the Project workforce where:

- the risks faced by the Project workforce differ significantly from normal industry risks
- the Project workforce requires specific management strategies for effective control
- there may be implications for public health systems.

24.5.1 CONSTRUCTION

Employees and contractors

No activities are envisaged during the construction phase that would be likely to have any unusual impact on the health and safety of the construction workforce and that are not adequately handled by the applicable legislation and codes of practice and by the Wandoan Joint Venture health and safety systems. The Project workforce will potentially be exposed to typical construction site health and safety risks including exposure to noise, dust, heat, and physical injury.

The hazard and risk assessment (refer Chapter 23 Hazard and Risk) noted that travel related accidents and injuries, and the risk of snake bites, are likely to be significant issues requiring management during construction.

Community

During the early works and remaining construction phase, some members of the community in the immediate vicinity of the Project area may be potentially exposed to increased levels of:

- dust
- noise and vibration
- traffic on local roads, including heavy vehicles.

In general however, and except for preliminary work associated with the transport of equipment and goods, the construction of roads, the gas pipeline and accommodation area, most activities will be relatively remote from sensitive receptors. Exposure to dust, noise and vibration will therefore be limited by the separation distances.

Dust will be generated mainly from traffic on unsealed roads, civil works and wind on exposed stockpiles and disturbed ground. Dust has the potential to affect the health of individuals susceptible to respiratory conditions.

Noise and vibration will be generated during the construction phase by heavy and light vehicle traffic on public and Project roads, and bulk earthworks. Noise from blasting is not expected to be an issue for construction, as blasting is not expected to be required for this phase. An assessment of potential noise impacts is included in Chapter 15 Noise, and an assessment of potential vibration impacts is included in Chapter 16 Vibration. These types of impacts are not likely to generate any direct physiological health effects, but could potentially cause impacts such as general loss of amenity and sleep disturbance.

Increased traffic, and particularly heavy vehicle traffic, has the potential to increase the risk of traffic accidents on public roads. The local community will be kept informed of the likely changes in traffic during the course of the construction program through the Community Reference Group and through means such as newsletters and advertisements in local papers (refer Chapter 4 Community Consultation).

Overall, residual health risks are expected to be low for most people as a result of the construction phase, but there is the potential for short term effects for some people using public roads or living close to some roads used for materials transport.

Details of potential impacts from Project construction activities to the health and safety values of the community and other stakeholders are described fully in the following chapters:

- Chapter 5 Project Construction
- Chapter 13 Air Quality
- Chapter 15 Noise
- Chapter 16 Vibration
- Chapter 21 Social.

24.5.2 OPERATIONS

Employees and contractors

No activities are envisaged during the operations phase of the Project that would be likely to have an impact on the health and safety of the Project workforce other than those that would normally be expected for a mining operation which are covered by legislation and codes of practice.

The main potential sources of health and safety impacts and the most likely impacts that may result during operation will include:

- exposure to moving equipment and vehicles (physical injury)
- noise and vibration (hearing loss)
- dust (respiratory illnesses)
- heat (dehydration, heat exhaustion/stroke)
- explosives and blasting (physical injury)
- exposure to dangerous goods and wastes (allergic reactions, toxicity)
- working at heights and falling objects (physical injury)
- confined spaces (asphyxiation, physical injury)
- potential for engulfment (asphyxiation).

Flyrock and airblast effects, both of which can cause serious personal injury, are the main health and safety concerns associated with explosives. Blasting misfires, which leave some of a shot's explosive charges undetonated, can pose risks to persons who must re-enter the blast site if the appropriate safety precautions are not taken.

The hazard and risk assessment (refer Chapter 23 Hazard and Risk) noted that travel related accidents and injuries are likely to be significant issues during the operations phase as a result of the number of Project personnel travelling to and from the Project site on a daily basis.

Details of potential impacts from Project operations to the health and safety values of the community and other stakeholders are described fully in the following chapters:

- Chapter 6 Project Operations
- Chapter 13 Air Quality
- Chapter 15 Noise
- Chapter 16 Vibration
- Chapter 21 Social.

Community

During the operational phase of the Project, potential issues that will require management are as follows:

- dust
- noise and vibration
- flyrock and airblast
- increased traffic on local roads, including heavy vehicles.

Dust will be generated by ongoing mining operations, including stripping and stockpiling of topsoil, removal and handling overburden and interburden, blasting, loading and handling of coal, mine vehicle traffic, and wind on stockpiles and unsealed roads.

The significant sources of noise and vibration will be mainly blasting, the operation of heavy vehicles and equipment, and operation of the optional proposed on-site power station.

24.5.3 DECOMMISSIONING

Once the economic coal reserves have been exhausted, the mine and associated infrastructure will be decommissioned and the affected areas rehabilitated in accordance with the Plan of Operations. All equipment will be removed, all structures will be demolished where agreed, and redundant materials will be removed from the site. A range of landforms and other features will have to remain after the Project has been completed. These landforms and features (such as dams and final voids) may pose a risk to the community should they gain access to the decommissioned site. Given that these areas will be located on privately owned property, it is expected that the risk to community safety will be low.

24.6 MITIGATION MEASURES

24.6.1 WJV HEALTH AND SAFETY POLICY

The WJV's objective is to eliminate work related injuries and occupational diseases from its operations and to be recognised as a leader in occupational health and safety management. The WJV is committed to providing and maintaining a healthy and safe environment for employees and contractors at its operations through appropriate leadership and systems, and continually improving its occupational health and safety performance. As part of its Health and Safety Policy, the WJV requires that health and safety are primary considerations in the activities of all its operations.

24.6.2 WJV SAFETY AND HEALTH MANAGEMENT SYSTEM

The WJV Health and Safety Policy commits to meeting the requirements of the CMSHA and the Workplace Health and Safety Act by committing the company to:

- implementing and maintaining Occupational Health and Safety Management Systems
- complying with relevant legal and other health and safety requirements as a minimum
- complying with company policies and standards
- managing occupational health and safety through a continual process of identification, assessment and management of risks
- promoting the involvement of employees and contractors in developing systems and improvements
- defining and setting occupational health and safety performance targets and measure our performance against industry peers
- conducting regular internal and external audits to continually improve systems and performance
- communicating company policies and achievements to employees, contractors, visitors and the wider community.

24.6.3 HEALTH CONTROLS

The following health controls will be implemented for the construction, operation and decommissioning phases of the Project.

Dust

Dust generation will be minimised for Project personnel and the community by implementation of mitigation measures detailed in Chapter 13 Air quality which include:

- targeted monitoring, reporting and review of dust generation levels
- the prompt rehabilitation of disturbed areas once they are no longer required for operations
- the watering of high use disturbed areas or disturbed areas that have the potential to impact sensitive receptors, roads and stockpiles
- engineering controls on coal handling and other equipment such as water sprays
- enclosing transfer points on conveyors, and providing dust collection equipment

- providing employees with personal protective equipment (PPE) to limit dust inhalation if required
- establishment of a complaints management system where any air quality complaints received will be recorded and investigated.

Dust exposure levels will be monitored as indicated in Chapter 13 Air Quality, to ensure that compliance with both the environmental authority and health exposure standards is achieved. Evidence of any change in the standard of health in the community during the operating period will be checked with local health providers and Queensland Health to identify any trends. In particular, long-term trends in the health of groups that might be especially susceptible to particular impacts, such as dust, will be monitored. This might include the elderly and those with pre-existing respiratory diseases.

Heat

The effects of heat will be managed by providing suitable working environments, equipment and protective clothing, making workers aware of the signs and symptoms of heat effects including dehydration, and ensuring that adequate hydration levels are maintained.

Noise and vibration

Exposure to noise will be limited by the proper design and maintenance of equipment, by engineering controls, and if necessary by the use of suitable personal protective equipment (PPE) in designated locations such as the coal preparation plant (CPP).

Noise generation will be minimised for Project personnel and the community by implementation of mitigation measures detailed in Chapter 15 Noise which include:

- establishing an equipment noise specification for equipment purchase
- attenuating targeted equipment in sensitive locations
- monitoring meteorological conditions as part of a targeted program to minimise noise propagation
- establishing a targeted program to monitor, reporting and review noise emission levels
- providing employees with PPE to limit exposure at noisy locations (e.g. CHPP)
- establishment of a complaints management system where any noise complaints received will be recorded and investigated.

Vibration impacts are expected to be low provided suitable blast design is undertaken as discussed in Chapter 16 Vibration.

Dangerous goods and waste

Dangerous goods will be stored in accordance with relevant standards, but generally only relatively small inventories (excluding diesel) will be held. Details are provided in Chapter 23 Hazard and Risk. Material Safety Data Sheets for all dangerous goods used or stored on the Project site will be maintained in a register accessible to Project personnel. Appropriate controls will be established during the preparation of the operations risk register and implemented for the safe use of each item in the inventory.

Waste streams will include waste lubricating oil, which will be stored in a bulk tank for disposal through the project's waste contractor, and there is unlikely to be any health effects. It is possible that water that has been in contact with coal or spoil, for example in

the wash plant, coal stockpiles, spoil dumps or tailings dam, especially if recycled, will develop characteristics such as acidity or contamination with heavy metals leached from coal or waste that make it unsuitable for human use or contact. However, given that such water will be contained within the Project water management system (WMS), no contact would normally occur, and this is not expected to be a health impact under normal conditions needing any specific controls.

Wastewater from the accommodation and MIA facilities will be treated by the Wandoan sewerage treatment plant.

Odour

General municipal waste will be deposited at either an on-site landfill or at a Dalby Regional Council (Council) run landfill. If a new landfill is developed, then the landfill will be the subject of a separate approvals process, and will be subject to industry best health and safety standards.

The waste will be covered on a daily basis to minimise the risk of generating odour issues and attracting vermin to either location. Volumes of waste generated by the Project are discussed in Chapter 18 Waste Management.

The expanded Wandoan waste water treatment plant (WWTP) will be designed to continue to provide tertiary treated effluent. Overall, it is not expected that odour will impact on the health of operating personnel or the community. The required upgrade of the WWTP will reduce the emission of odour from current levels as detailed in the Chapter 13 Air quality and will meet EPA's Guideline - Odour Impact Assessment from Developments, July 2004.

Overall, the risk of odour impacts during the construction and operation phases is considered to be low.

Potable water supply

Potable water will be sourced from the expanded Wandoan water treatment plant. Water quality will be continually tested by Council prior to delivery to mine employees. Provided appropriately scheduled water testing is undertaken, the risk of health related impacts is expected to be low.

Weeds and feral animals

Through the terrestrial ecology assessment in Chapter 17A Terrestrial Ecology, weeds and pests having the potential to cause environmental and economic impact have been identified on the site including Parthenium, Paramatta Grass, Dingo/Wild Dog, Feral Cat, Feral Pig and others. A Weed and Feral Animal management plan will be developed to prevent the spread and proliferation of these pests, both to and from the Project area. This plan will be developed in consultation with neighbouring landholders, community groups and Local and State government agencies before the construction phase begins. Risks to health and safety include the handling and storage of chemical herbicides and pesticides, the use of quad bikes for spraying and trips, and falls when walking through bushland.

Disease

Water management and the efficient use and recycling of raw operations water are an integral part of the Project. The water management system has been designed to provide the most efficient storage, transfer and reuse of mine water. Given the design consideration to integrate the proposed water management system with the local topography, and the dynamic nature of the water management system with water regularly being circulated between dams, it is not expected that there will be any issues regarding the transmission of bacteria, drainage or insect breeding eg mosquitoes and biting midges. Overall, the risk of impact is considered to be low.

Snakes

As part of the employee induction program, employees will be made aware of the risk of snakes, and will be provided with appropriate training and first aid equipment with which to deal with snake bite.

24.6.4 SAFETY CONTROLS

Traffic and journey accidents

The conditions of employment for all WJV mine personnel will include a requirement which limits the driving distances travelled to and from the site. Travel to the Taroom and Miles townships will minimise the risk of journey accidents caused by fatigue as well as ensuring that employees are fit for work. Induction and ongoing awareness training sessions will include the risk of traffic accidents and the need to drive with care at all times. Contractual arrangements, monitoring, and awareness training will be used to ensure compliance with this requirement. A travel fatigue management policy will be implemented.

Local residents will be kept aware of any changes expected in traffic during the construction and operations periods. The WJV will liaise with the Queensland Police Service to ensure that the driving habits of the workforce do not unduly increase the risk to the rest of the community. An assessment of the risks to the community and mitigation measures is contained in Chapter 12 Transportation.

Moving equipment and vehicles

Equipment (mobile and fixed) on the proposed mine pose a risk to personnel resulting in injury through collision, crushing, trapping and other forms of physical contact or uncontrolled release of energy. Equipment includes light and heavy vehicles, draglines, crushers, conveyors, coal washing plant and engines in the optional on-site gas fired power station.

Procedures to maintain safe working separations and implement safety lock-out systems for equipment under maintenance, engineering controls to prevent contact or trip equipment, and induction and training programs to introduce and reinforce all procedural requirements, will be used to minimise the risk of injury to low levels.

Vehicles will include heavy vehicles (haul trucks, loaders, scrapers) and light vehicles (four wheel drives) operating on haul roads and access roads around the mine site. The drivers of heavy vehicles, such as haul trucks, may not be aware of the presence of smaller vehicles in their vicinity, increasing the risk of collisions. Road conditions on a mine site also present additional hazards due to sometimes steep gradients, high embankments and the presence of structures such as berms and roadside drains.

These risks can be kept to acceptable levels by putting key controls in place. Roads will be suitably designed to suit the nature and volume of traffic, the topography and likely weather conditions, and constructed and maintained to allow safe operation. Procedures and rules for safe driving on site, including speed limits, together with standard vehicle safety fittings such as flags, and reversing beepers will assist in reducing the likelihood of collision particularly between light and heavy vehicles. Site induction and driver training programs will ensure vehicles are driven in a safe manner and that site driving rules are understood. Vehicle inspection checks will also be undertaken as part of the Project's regular maintenance program.

With the establishment and implementation of the above controls, the risk associated with on-site driving is assessed to be of medium risk.

Driving off-site will be subject to normal road traffic rules. A more detailed assessment of the risks involved and mitigation measures recommended is contained in Chapter 12 Transportation.

Explosives and blasting

With the exception of initiating explosives which will be stored in site magazines, explosives will not be stored on site. Procedures will specify how explosives will be transported, loaded and fired in accordance with the CMSHA, the *Explosives Act 1999* and AS 2187.2-1998: Explosives — Storage Transport and Use, Part 2: Use of Explosives.

This risk arising from the use of explosives and blasting will be reduced to an acceptable industry level by using a specialist explosives contractor with personnel licensed and trained in the transport, handling, mixing and firing of explosives and specialist blasting personnel to ensure blasting design meets the noise, and vibration and safety requirements outlined in Chapter 15 Noise, and Chapter 16 Vibration, respectively.

Under the WJV's procedures, access to the blast area will be restricted during firing. These restrictions will include temporary road closure and evacuation warnings on site before blasting, to ensure that persons are at a safe distance from the shot and where necessary wearing the appropriate personal protective equipment (PPE).

As discussed in Chapter 15 Noise and Chapter 16 Vibration, noise and vibration and airblast overpressure will not be an issue for the Project at sensitive receptors external to the mining lease. A boundary has been established for Frank Creek Pit on MLA 50230, the mining areas closest to Wandoan, beyond which no blasting will occur. This will limit the noise and vibration, and eliminate the risk of flyrock and unacceptable levels airblast in the Wandoan Township. It will also reduce the levels of dust to which residents will be exposed to acceptable levels, as discussed further in Chapter 13 Air quality.

The Leichhardt Highway, which follows part of the boundary of MLA 50230, will be closed temporarily during firing in the Frank Creek Pit, to further minimise the risk of flyrock to road users.

Fuel storage and handling

The most common dangerous goods on site that, because of their properties or the quantities involved, could create any significant level of health or safety risk will be diesel fuel and lubricants. They will be stored and transported in accordance with AS1940-2004: The storage and handling of flammable and combustible liquids.

The risk of fire for these storages is small, and it is unlikely that any other significant health effects would arise. Appropriate fire fighting equipment and systems will be maintained on site for fighting any fires relating to fuel, coal or other flammable or combustible material.

Working at heights

The open cut mining operation of the Project and its associated infrastructure typically has many activities and areas where working at heights is required, including inspection of high walls, working on large equipment items such as crushers and conveyors, or heavy equipment and vehicles such as haul trucks and draglines.

In addition, there is the risk of objects falling from heights such as rocks from highwalls.

The risks of working at heights and from falling objects will be covered by a permit-to-work system. This will specify the necessary PPE and any special safety equipment required, such as harnesses and arrestor systems, lifts and work platforms, for all circumstances where there is a requirement for working at heights.

Confined spaces

Working in confined spaces has the potential to cause injury or death through the presence of toxic materials, a lack of oxygen, movement of equipment or material, or a release of energy. Confined space procedures will be followed by anyone entering a confined space. These procedures will be enforced under the WJV health and safety system, and will be supported by appropriate training. This will be adequate to keep the risk to personnel entering confined spaces within acceptable limits.

Potential for engulfment

Unstable structures such as stockpiles, waste dumps, high embankments and the contents of hoppers have the potential to collapse and entrap or engulf personnel. Particular risks may be covered under confined space safety management for some locations, but will otherwise be covered by relevant procedures detailing the risks and safety measures that must be taken when working in these areas.

Spontaneous combustion

Based on coal stockpile assessments conducted to date, the Wandoan coal is unlikely to spontaneous combustion if appropriate management procedures are adopted. Fire fighting equipment will be established to manage this risk in accordance with industry best practice.

24.6.5 DECOMMISSIONING AND REHABILITATION

The rehabilitation strategies planned for the open cut mining phase will facilitate the long term stability of 'out of pit' dumps and will promote a revegetation cover that minimises erosion and silt load potentially entering the creek system. It is planned that after mining is completed, the land would be returned to its current use, namely agricultural purposes and the existing regional ecosystem where possible. Any dangerous goods or other chemicals will be removed from site and any contaminated areas will be appropriately managed to eliminate any danger to the community.

Within this framework, the potential risks of unauthorised community access during the post mining phase are confined to open cut issues and include:

- driving over a highwall
- driving into a water storage pond.

Key controls to protect the community include:

- warning signs
- fencing off hazardous areas
- safety rills to prevent travel over embankments.

In addition, the site is quite isolated from the surrounding community. It is expected that ownership of the Project area land either by a private entity or by a public company will continue to restrict general access by the public.

A more detailed evaluation of these risks and the corresponding controls will be developed in consultation with the relevant authorities as part of the mine closure process.

In addition to this assessment, cumulative health risks are considered in Chapter 26.

24.7 RESIDUAL IMPACTS

Health and safety risks to the Project workforce and the community are expected to be adequately managed following the application of the specific management and mitigation strategies identified in this chapter, including full implementation of the WJV Occupational Health and Management System.

Residual impacts on the health and safety of the community are expected to be well within acceptable limits as a result of the management and mitigation strategies proposed.

24.8 REFERENCES

AS 1940-2004: The storage and handling of flammable and combustible liquids.

AS 2187.2-1998: Explosives — Storage Transport and Use.