00 Executive Summary

Section 00 Executive Summary

0.1 Introduction

The Proponent, Hancock Galilee Pty Ltd (HGPL) proposes to develop a new coal mine to produce up to 30 million tonnes of thermal coal annually for the export market for a period of 30 years. The coal mine which is comprised of both open-cut and underground workings, is targeting the thermal coal seams in the Upper Permian coal measures of the Galilee Basin in Queensland, Australia. The coal mine, known as the Kevin's Corner Coal Project (the Project), will be situated in central Queensland approximately 110 kilometres south-west of Clermont, 340 kilometres south-west of Mackay and 65 kilometres north of the township of Alpha, the nearest residential area to the Project site.

The Project will consist primarily of three underground longwall operations, supplemented in the early years with two open-cut pits. It is planned that the Project will link with the rail line currently being proposed by Hancock Coal Pty Ltd's (HCPLs) Alpha Rail Project.

The Proponent submitted the mining lease application (MLA 70425) to the Queensland Government in December 2009 and has prepared an Environmental Impact Statement (EIS) to assess the biophysical, social, and economic impacts associated with developing the coal mine. The EIS was developed in accordance with Part 4 of the State Development and *Public Works Organisation Act 1971* (Queensland), the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) (Commonwealth) and Terms of Reference (TOR) that were issued by the Queensland Coordinator-General in February 2010.

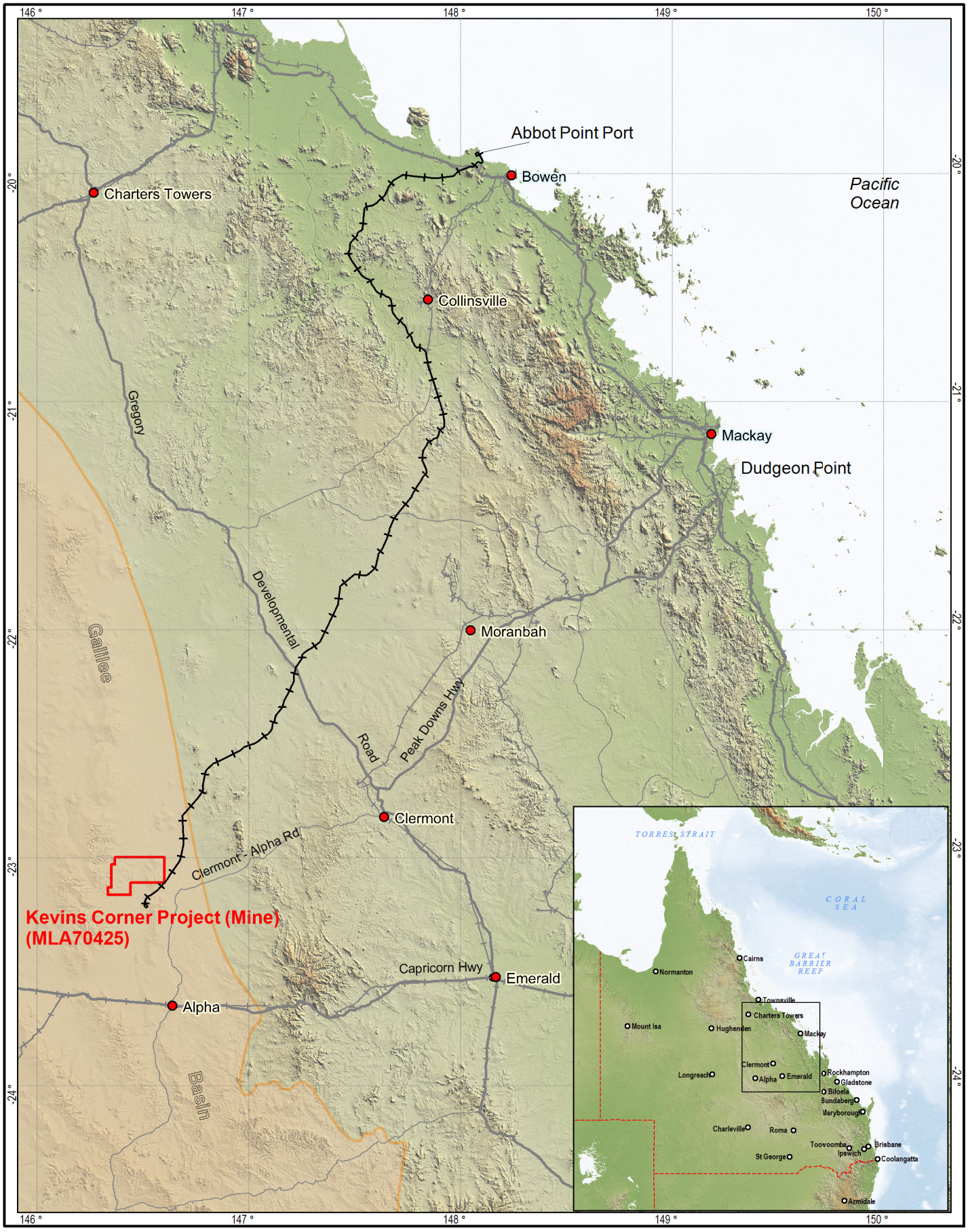
Figure 0-1 provides an overview of the Project's location within a regional context.

Coal that is mined will be processed on site before transport via rail to the Abbot Point Coal Terminal where it will be stockpiled and transferred to ship. The Abbot Point Coal Terminal is an existing port facility that is owned and operated by North Queensland Bulk Ports Corporation. Port facilities will be expanded to accommodate the throughput from the Kevin's Corner Coal Project. It should be noted that North Queensland Bulk Ports Corporation is obtaining separate environmental approvals for the port's expansion, and those activities are excluded from the EIS.

The Kevin's Corner Coal Project will provide a range of substantial benefits including:

- Employment for construction, operations and other indirect employment benefits;
- Regional economic benefits;
- Export income; and
- Significant State and Commonwealth Government taxes and royalties.

Overall, the EIS demonstrates that the Project meets the Queensland Government's objectives for development of the Galilee Basin in an environmentally sustainable manner. The EIS also describes the benefits that will be delivered to the community as a result of the Project's implementation.



Mining Lease Application (MLA70425) Boundary
Proposed Alpha Project Rail Line

Source: See Copyright Details below and for full disclosure Please Refer to the EIS *Volume 1 - References*

0 25 50km
Scale 1:2,500,000 (A4)
Projection: Geographic (GDA94)
Datum: GDA94, MGA Zone55

N W E S

HANCOCK GALILEE PTY LTD
Kevin's Corner Project
Environmental Impact Statement

KEVINS CORNER REGIONAL LOCATION

Job Number 4262 6660
Revision B
Date 12-09-2011

Figure: 0-1

File No: 42626660-g-1145.wor

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0.2 Project Proponent

HGPL is a wholly owned subsidiary of GVK Coal Developers (Singapore) Pte Limited (GVKCDPL).

HGPL until September 2011 was owned by Hancock Prospecting Pty Ltd, who had held the relevant mineral development rights since the 1970's.

The Project area is within existing MDL 333 and EPC 1210. The relevant portions of those tenements are contained within Mining Lease Application 70425 which HGPL submitted for approval in December 2009. The grant of the Mining Lease is pending HGPL obtaining the relevant statutory approvals.

The Proponents contact details are as follows:

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Hancock Galilee Pty Limited,
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Brisbane QLD 4000, Australia

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Hancock Galilee Pty Limited, GPO Box 963
Brisbane QLD 4001, Australia

Phone: +617 3231 9600

0.3 Project Overview

The proposed Project involves the following key elements:

- Mining Lease Application (MLA) 70425 covers the Kevin's Corner Coal Project mine site, which extends over Exploration Permit Coal (EPC) 1210 and Mineral Development Licence (MDL) 333.
- A coal mine that is capable of producing 30 million tonnes of thermal coal annually for the export market for a 30 year period.
- The mine contains sufficient resources to extend the Project life beyond 30 years.At the time of the EIS assessment, the anticipated project timing indicated the construction phase, taking approximately 48 months, would commence in late 2012 and the operational phase would commence in 2014. While all of the EIS assessments are based on these projections, they are to be considered indicative only.
- The Project mine plan comprises three underground longwall operations, supplemented in the early years with two open-cut pits. Coal will be mined from open-cut pits using truck-shovel methods and transported to an on-site coal processing plant. Following processing, the coal will dispatched by rail to Abbot Point for export.
- The coal mine's ancillary infrastructure includes an above-ground tailings storage facility, environmental water and raw water dams, water supply and treatment infrastructure, access roads, workshops, fuel and oil storage, airport, communications and power infrastructure, offices and accommodation facilities.

- Approvals for the water and power supplies required for the Project will be conducted by third party proponents. As part of those approvals the respective proponent will be required to consider the impacts on the State's resources.
- The overall scope of the Project includes accessing and using the proposed Alpha Rail Line and expansion of the existing port facilities at Abbot Point. The port expansion works are the subject of separate environmental approvals that are being procured by the Proponent in conjunction with North Queensland Bulk Ports Corporation, the port owner and operator.
- The coal will be stockpiled and transferred to ship at the expanded Abbot Point Coal Terminal.

0.4 Aims and Objectives

Prior to the preparation of the EIS the Proponent conducted a detailed Pre-feasibility study with the aim of analysing the Project's viability. All critical success factors were assessed, including the existing environmental conditions, local and regional communities, cultural heritage requirements and the regulatory regime in which the Project would operate. The studies confirmed that the Project could be developed and operated within acceptable levels of technical risk and at the same time satisfy anticipated regulatory, social and environmental criteria.

From a commercial perspective, rising world economic growth leads to increased world energy demand, and notwithstanding other energy sources, the studies confirmed that demand for coal as an energy source will remain strong. While the coal industry in Australia has seen substantial consolidation, major international customers are supporting independent producers such as HGPL because of the strategic importance of product diversity. These factors, plus the ability to produce a competitive product at acceptable levels of return, underpin the commercial viability of the Project. Accordingly, the Proponent has prepared the EIS in order to achieve the objective of establishing the framework in which the Project can be successfully developed, and operated, as a world-class independent source of good quality thermal coal.

0.5 Project Needs and Benefits

As an important fuel for electricity generation and an integral component in the steel industry, coal will continue to have a major role to play in supporting the needs of worldwide economic and social development for many years to come. The proposed Project is aimed at the widening gap between existing global coal production and worldwide demand by becoming a provider within the world thermal coal market, especially to the growth markets in Asia.

Export revenue from the Project will bring substantial benefits through positive impacts on the national trade balance. Queensland will also benefit through direct royalties and infrastructure improvements. The Project will provide major employment and economic benefits for the local, regional and state communities.

0.6 Alternatives Considered

The pre-feasibility study assessed a range of strategic options for developing the Project and whilst there are many factors that affect viability, such as production costs, thermal coal price forecasts and sovereign risk, the main development options that were assessed were focused upon the extracting, processing and transporting of the product coal to international markets.

An exploration program demonstrated that the coal seam stratigraphy in the eastern areas of MLA 70425 is at relatively shallow depth and suitable for extraction by open-cut mining methods. With increasing depth of the coal seams in the western area of MLA 70425, mining by underground longwall methods is deemed the most suitable means of recovering the resource. Given the very large scale of production required to achieve commercial viability, conventional coal handling and washing methods were selected in response to coal product characteristics and in order to maximise operating plant yield and reliability. The two coal export terminal options of Dudgeon Point and Abbot Point were reviewed as a part of the Alpha Coal Project. The latter was selected due to reduced environmental impacts and the more advanced stage of development at Abbot Point.

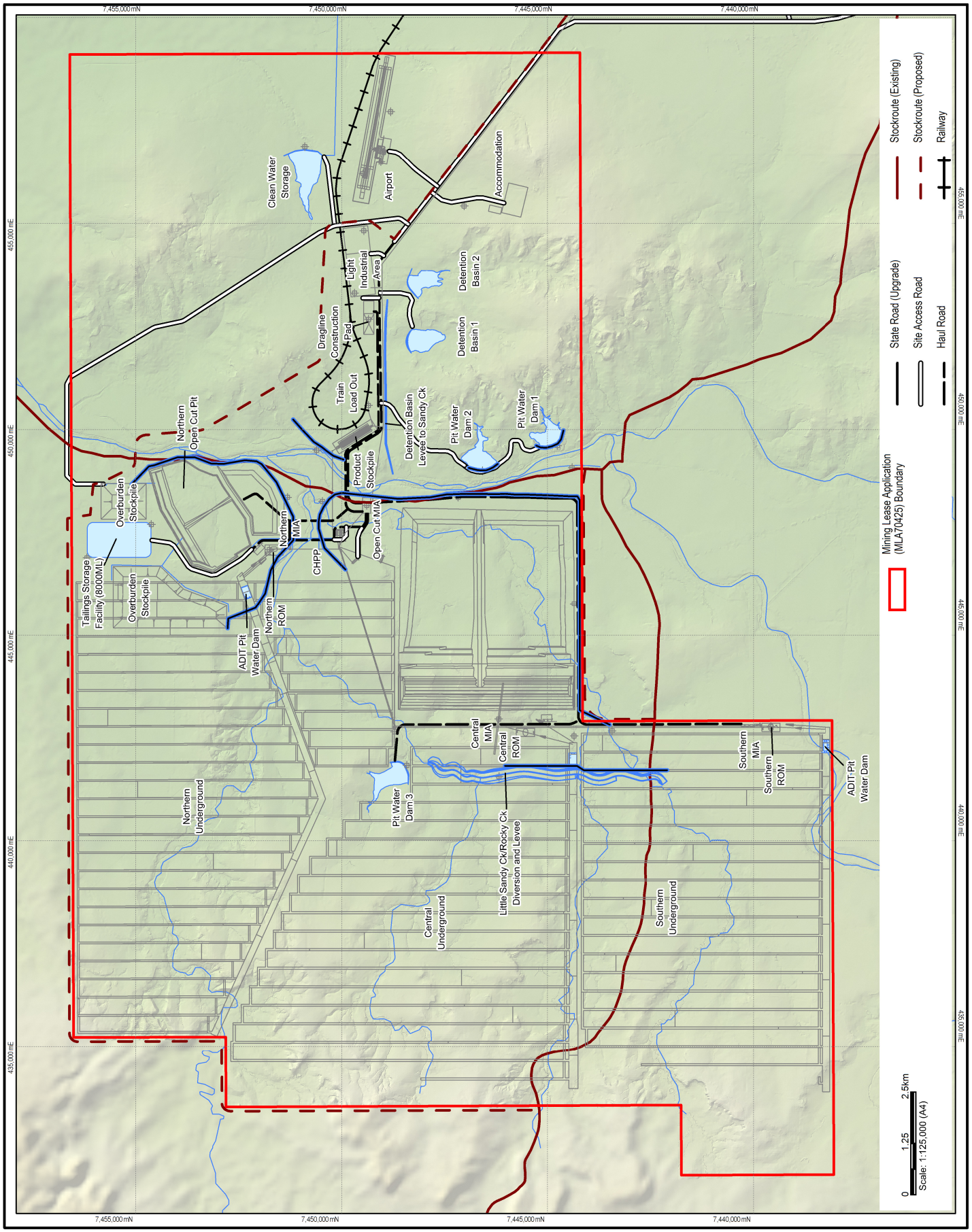
Figure 0-2 provides an overview of the Kevin's Corner Coal Mine Project mine site.

0.7 Consequences of Not Proceeding

If the Project did not proceed, the opportunity to fill the widening gap between existing global coal production and worldwide demand would be lost. The cost to Queensland of not proceeding includes:

- Approximately 2,500 mine construction jobs will not be created;
- Long-term employment of approximately 1,500 mining, plus indirect flow-on employment opportunities for the region (including around 2,000 indirect full-time equivalent positions) will not be created;
- Significant export income and injection of revenue into the regional economy would not occur;
- Significant taxes and royalties would not be generated for the State and the Nation; and
- The economic opportunity to develop a viable quality coal resource that is in demand will not be realised.

The benefits of not proceeding would be avoiding potential environmental impacts. However, continuing global coal demand will generate project development elsewhere in the world and there is no guarantee that those projects would be based on the ecological sustainable development principles proposed for the Project.



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Datum: GDA94, MGA Zone55

HANCOCK GALILEE PTY LTD

Kevin's Corner Project
Environmental Impact Statement

KEVINS CORNER
OVERALL SITE LAYOUT PLAN

Job Number	4262 6660
Revision	C
Date	12-09-2011

Figure: 0-2

File No: 42626660-g-1146c.wor

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0.8 Relationship to Other Projects

The Project is dependant on a range of additional key services and facilities for effective implementation. Those additional services and facilities include the following projects that are currently the subject of separate environmental approvals:

- The proposed Alpha Coal Project proposed by Hancock Coal Pty Ltd, targeting annual production of 30 million tonnes;
- The proposed Alpha Rail Line proposed by Hancock Coal Pty Ltd, which will provide the necessary infrastructure to transport the export grade product coal to Abbot Point;
- The proposed expansion of Abbot Point by North Queensland Bulk Ports Corporation to enable (amongst other projects) handling of the Project's targeted annual production of 30 million tonnes;
- The proposed Connors River Dam and Moranbah to Galilee Basin Pipeline projects by SunWater, aimed to provide water to the mine and other Galilee Basin projects; and
- The proposed high voltage power transmission line, termed the Galilee Basin Transmission Project by Powerlink, which will provide power to the mine site and other Galilee Basin projects.

0.9 Stakeholders and Consultation

In conjunction with the Alpha Coal Project, the Proponent has undertaken an extensive community consultation and stakeholder engagement program relating to the Project. The Program aimed to identify community issues or concerns and respond to and mitigate those issues wherever possible. The Proponent continues proactively working with stakeholders with the aim to establish long-term relationships between the Project and the community. Key stakeholders include:

- Landowners;
- Regional Councils including Barcaldine, Central Highlands and Isaac;
- Queensland Government departments (covering health, social welfare, water and waste management, roads and highways, and resources;
- Emergency services providers including Police, Ambulance, and Fire and Rescue;
- Education centres including day care, kindergartens, schools, colleges and universities;
- Indigenous groups;
- Non-governmental organisations;
- Community members and organisations;
- Transport organisations; and
- Business owners and related service providers.

0.10 Environmental Impact Statement

The EIS has been prepared to inform decision makers, interested and affected parties, and the general public about the potential environmental, social and economic issues relating to development and operation of the Project, and how the Proponent will manage those issues. The content of the EIS addresses the requirements of the EIS Terms of Reference that were issued by the Coordinator-General for the Project in February 2010.

The EIS has been made publicly available for comment, and submissions are sought from individuals and organisations. After consideration of the EIS and the submissions received, the Department of Infrastructure and Planning (now the Significant Projects Coordination of the Department of Employment, Economic Development and Innovation [DEEDI]) may request supplementary data to cover any additional matters of concern. A final decision on the environmental acceptability of the Project will be made on the basis of the information provided in the EIS, and if necessary, the supplementary report.

The EIS process allows for community consultation and environmental protection by consideration of potential impacts and management strategies. DEEDI is responsible for coordinating the impact assessment process for this Project.

The objective of the EIS process is to ensure that all direct and indirect environmental, social and economic impacts are fully examined and addressed. The EIS is a self-contained and comprehensive document that provides for:

- Interested bodies and persons; a basis for understanding the Project, alternatives and preferred solutions, the existing environment that would be affected by the Project, the positive and negative impacts that may occur, and the measures to be taken to mitigate all adverse impacts.
- The DEEDI and the Advisory Bodies; a framework for assessing the impacts of the Project, in view of legislative and policy provisions.
- The Proponent; a definitive statement of measures and actions to be undertaken to mitigate any adverse impacts during and following the implementation of the Project. A draft environmental management plan (EM Plan) is included as part of the EIS, describing environmental management strategies designed to meet agreed upon performance criteria. This EM Plan will be further developed over time as potential improvements in the area of environmental management are established.

The EIS addresses the entire life of the Project, including construction, operation, maintenance, decommissioning and rehabilitation. The EIS enables reasonable, environmentally sound, cost effective, and technically achievable conditions to be developed to ensure that the potential social and environmental impacts of the Project are reduced to acceptable levels and positive impacts are optimised. The level of analysis and detail in the EIS reflects the environmental risks and level of significance of particular impacts.

0.11 Environmental Overview

An overview of the mine's environmental values and mitigations is outlined below.

0.11.1 Climate

The climate assessment of the mine site describes rainfall patterns, humidity, air temperature, wind speed and direction, stability class and mixing height. The following climatic patterns were identified:

- A mean annual rainfall of 556 mm with approximately 48% of rainfall occurring in summer.
- The site is subject to typically hot days during summer with mean maximum daytime temperatures around 35°C falling to 23°C during the winter months. Overnight temperatures are generally cool throughout the year and cold during the winter months, with mean minimum daily temperatures of 9°C in July, rising to greater than 22°C between December and February.
- The site has a mean relative humidity that is generally higher from February to June and lower from September to December.
- Winds at the site are predominantly from the east through to northeast. The site is characterised by occasional light winds from the southeast and very infrequent winds from the west.

0.11.2 Geology

The Project is located in the Galilee Basin in a sequence of Late Carboniferous to Middle Triassic sedimentary rocks overlying Late Devonian to Early Carboniferous sedimentary and volcanic rocks of the Drummond Basin, exposed in a linear belt between Pentland in the north and Tambo in the south.

The rocks of the Galilee Basin are of Later Permian ages, similar to those of the Bowen Basin, and are exposed east of the Drummond Basin. The Bowen and Galilee basins are separated along a north-trending structural ridge between Anakie and Springsure, referred to as the Springsure Shelf. Much of the western portion of the Galilee Basin is interpreted as occurring beneath Mesozoic sediments of the Eromanga Basin.

Late Permian, coal-bearing strata of the Galilee Basin sub-crop are found in a linear, north-trending belt in the central portion of the exposed section of the basin with shallow dipping to the west. No major regional scale fold and fault structures have been identified in regional mapping of the Project area, thus the geology is considered to be very stable and consistent throughout the region.

0.11.3 Soils

The preparation of a soil and land suitability assessment for the Project was undertaken using a two phased process. Phase 1 involved an initial reconnaissance level investigation and communications with the Department of Environment and Resource Management (DERM) to provide a suitable Phase 2 approach outside the DERM guidelines. In December 2010 DERM responded with an agreement for a suitable scope for Phase 2. A preliminary EIS report was submitted in April 2011, which outlined results from Phase 1 and details of the proposed assessment process to be undertaken in Phase 2.

Phase 2 involved a targeted survey at a 1:100,000 scale assessing 86 test pits, and was undertaken in May 2011, following significant delays due to wet weather and inaccessible conditions.

An initial broad scale reconnaissance soil map for the Study Area was developed using the Desert Upland Land Resource Assessment (Lorimer 2005) and a reconnaissance level field investigation undertaken in late 2010. The Study Area consisted of 5 Landscapes, 8 Land Systems and 23 Land units. The phase 2 investigations distinguished 26 representative soil types for the land units previously mapped, using field and laboratory analysis.

The project area is dominated by Sodosols (26%) and Kandosols (23%), with Rudosols (16%), Chromosols (15%) and Dermosols (15%) also present throughout the project area. Small areas of Tenosols (4%) are located along creeklines, and very small pockets of Vertosols (1%) are also present.

Based on background research and reconnaissance-level field assessments during the preliminary phase 1 of the soil assessment, 22 land units were identified within 8 soil landscapes found within the Project site.

These soil are described using field and laboratory data; and suitable stripping depths for reuse in rehabilitation, including volumes, and management principles to be applied to each soil type have been recommended.

0.11.4 Land Use and Tenure

The Project is situated within the former Jericho Shire of the Barcaldine Regional Council, located in the Central West Region of Queensland. The present and historical predominant land use of the Project area is for leasehold pastoral activities. From the 1970s onwards, the Project area has undergone extensive mineral resource exploration. Cattle grazing occurs within and surrounding the Project area, with large portions of the properties cleared for grazing purposes. However, remnant bushland and scrub remain, particularly along riparian corridors. The Project area includes an agricultural structure on the Wendouree property holding as well as dams and fencing.

The boundaries of MLA 70425 directly impact upon five private land holdings and the protected area known as Cudmore Resources Reserve. However, no homesteads are situated with the Project area. HGPL is currently liaising with landholders for the acquisition of impacted properties and with the Department of Environment and Resource Management (DERM) regarding the ingress of the Project beneath Cudmore Resources Reserve. HGPL will seek an "Interest in a Protected Area" in accordance with the requirements of Section 34 of the *Nature Conservation Act 1992* to mine beneath Cudmore Resources Reserve. The local transport infrastructure network, which includes Jericho-Degulla Road, Degulla Road and Stock Routes U291 and U301, is to be closed and realigned to ensure connectivity with their existing catchments and to avoid the Project area.

The Project was assessed against applicable Queensland statutory planning instruments, including the local planning scheme, the Central West Regional Plan and state planning policies, amongst other things. The Project is generally consistent with the desired environmental outcomes for the planning area, is supportive of the regional policies and strategies for the Central West Region, adheres to the requirements of the identified state planning policies, and supports other planning instruments that relate to the activity.

0.11.5 Landscape Character

The character of the landscape within and surrounding the mine area has been altered over many years by agricultural improvements and cattle grazing. The landscape characteristics are generally robust with a low sensitivity toward the changes arising from mining development and operation.

Although the mine development will require the removal of some existing woodland vegetation, the resultant visual impacts will be contained within limited viewsheds by woodland vegetation and landform within and adjoining the Project area. There will be very low visibility of the mine from roads in the local vicinity.

0.11.6 Land Contamination

Searches of the Queensland DERM's Environmental Management Register and Contaminated Land Register were carried out for the site. The results of the register searches indicated that no lots were listed on either register. A site inspection in October 2010 indicated that there are a few minor contaminated areas resulting from historical land uses such as fuel storage, waste oil storage and minor pesticide and herbicide use. There were no other recognised significant potential contamination concerns identified during the site visit or review of historical site data.

0.11.7 Terrestrial Ecology

Field surveys over the mine area have identified the following values relating to the terrestrial ecology within the Project area:

- Environmentally sensitive areas (ESAs) within close proximity to the Project site include:
  - Brigalow Open Woodland (RE 10.9.3) to the south west of the site;
  - Cudmore Resources Reserve within the north-eastern section of the site;
  - Cudmore National Park located 700 m to the west of the Project boundary; and
  - A Nature refuge located 27 km to the south of the Project boundary.
- One Threatened Ecological Community was identified during surveys, Natural Grasslands of the Central Highlands and northern Fitzroy Basin. No threatened species were identified within this community. Identified non-native species include buffel grass (*Cenchrus ciliaris*), caustic weed (*Chamaesyce drummondii*) and paddy's lucerne (*Sida spinosa*).
- Fauna species recorded on site that are listed under State and Commonwealth legislation include the squatter pigeon (Southern subspecies) (*Geophaps scripta scripta*) and the little pied bat (*Chalinolobus picatus*);
- No protected areas under the *Nature Conservation Act 1992* are within or near the site;
- There were 25 distinct vegetation communities identified on the site, of which 24 are classed as remnant vegetation under the *Vegetation Management Act 1999*;
- There were 458 flora species identified but none are listed under State or Commonwealth legislation as species of conservation significance;

- Three weed species declared as Class 2 weeds under the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act) were identified, including the Common Pest Pear (*Opuntia stricta*); Velvety Tree Pear (*Opuntia tomentosa);* and Parkinsonia (*Parkinsonia aculeata*).
- Eight introduced pest fauna species were recorded during the field surveys; five of these species are declared as Class 2 pests under the LP Act, including feral cats (*Felis catus*), feral pigs (*Sus scrofa*), european rabbits (*Oryctolagus cuniculus*), feral goats (*Capra hircus*), and dingos and wild dogs (*Canis familiaris dingo)*; and
- There were 92 bird species, 35 mammals (5 introduced), 26 reptiles and 10 amphibians (1 introduced) identified during the wet and dry season fauna surveys.

Desktop studies and subsequent reviews indicated the potential presence of the following Matters of National Environmental Significance (MNES):

- 1 flora species of conservation significance (*Dicanthium queenslandicum*) listed under the EPBC Act. This species was considered to have a low likelihood of being present within the Project area. One EPBC Act listed threatened ecological community (TEC) (Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin) was identified from the combined desktop and field assessments.
- 10 fauna species of conservation significance listed under the EPBC Act. Of these, 5 were considered to have a moderate likelihood of being present (*Neochmia ruficauda ruficauda, Denisonia maculate, Egernia rugosa,Furina dunmalli*, *Paradelma orientalis*) within the project site and 4, a low likelihood of presence (*Erythrotriorchis radiatus, Rostratula australis, Poephila cincta cincta, Nyctophilus timoriensis*). The remaining 1 EPBC Act listed threatened fauna species was recorded from field surveys of the project site (*Geophaps scripta scripta*). This species is listed as Vulnerable under the EPBC Act.
- 10 Migratory species listed under the EPBC Act (*Apus pacificus, Ardea alba, Ardea ibis, Gallinago hardwickii, Haliaeetus leucogaster, Hirundapus caudacutus, Merops ornatus, Myiagra cyanoleuca, Nettapus coromandelianus, Rostrtula benghalensis s. lat.*) were identified during the combined desktop and field survey effort.

Measures will be implemented to minimise and manage the effects of disturbance, habitat loss, weeds and pests on the above species and communities.

0.11.8 Aquatic Ecology and Stygofauna

Sandy Creek is the main tributary through the site and flows into the Belyando River north of the Project area. The Belyando River joins the Suttor River and eventually the Burdekin River at Lake Dalrymple (Burdekin Falls Dam). The aquatic environment of these waterways has reduced environmental value due to grazing pressure, bank erosion and in-stream degradation. Basic aquatic habitat structure offers limited options for aquatic inhabitants and poor water quality further reduces the overall health of the existing environment.

No rare or threatened animal or plant species, listed under the EPBC Act 1999 or the *Nature Conservation Act 1992* (NC Act) were identified during the survey. Many of the creeks are fringed by Regional Ecosystem 10.3.14 (*Eucalyptus camaldulensis* woodland), which is listed as "Of Concern" by DERM due to weed infestation by species including buffel grass (*Cenchrus ciliaris*) and parkinsonia (*Parkinsonia aculeata*) and habitat degradation by stock and feral pigs.

An indicative stygofauna survey of groundwater wells in and around the Project site indicated the presence of a localised population of stygofauna in groundwater at a single well outside the boundary of MLA 70425. No stygofauna have currently been recorded in groundwater inside the Project site.

A range of measures will be implemented to manage aquatic environmental values, including aquatic ecology and water quality monitoring, and weed and sediment management.

0.11.9 Matters of National Environmental Significance

To describe the existing environmental values of the Project area in terms of the presence of EPBC-listed species, a combination of ecological desktop assessments and seasonal field surveys were conducted. The desktop assessment comprised a review of relevant literature and database searches. Flora and fauna surveys were conducted to obtain ecological information relevant to the Project and to ground-truth results from desktop assessments. These assessments resulted in a list of EPBC-listed species that potentially occur on the Project site.

The presence/absence data obtained from the combined desktop and field assessments was then applied in a mapping study which used DERM data to describe the potential habitat available to the EPBC-listed species that may occur in the Project study area. This habitat was overlaid with potential direct and indirect impact footprints and the area of potential habitat at risk of impacts from the Project was calculated, provided and discussed. The significance of these impacts was then assessed in relation to the amount of available habitat in the region of the Project in conjunction with the mitigation measures and management strategies proposed for the Project.

Desktop studies indicated the potential presence of 1 flora species of conservation significance (*Dicanthium queenslandicum*) listed under the EPBC Act. This species was considered to have a low likelihood of being present within the Project area. One EPBC Act listed threatened ecological community (TEC) (Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin) was identified from the combined desktop and field assessments.

Review of database searches indicated the potential presence of 10 fauna species of conservation significance listed under the EPBC Act. Of these, 5 were considered to have a moderate likelihood of being present (*Neochmia ruficauda ruficauda, Denisonia maculate, Egernia rugosa,Furina dunmalli*, *Paradelma orientalis*) within the project site and 4, a low likelihood of presence (*Erythrotriorchis radiatus, Rostratula australis, Poephila cincta cincta, Nyctophilus timoriensis*). The remaining 1 EPBC Act listed threatened fauna species was recorded from field surveys of the project site (*Geophaps scripta scripta*). This species is listed as Vulnerable under the EPBC Act.

A total of 10 Migratory species listed under the EPBC Act (*Apus pacificus, Ardea alba, Ardea ibis, Gallinago hardwickii, Haliaeetus leucogaster, Hirundapus caudacutus, Merops ornatus, Myiagra cyanoleuca, Nettapus coromandelianus, Rostrtula benghalensis s. lat.*) were identified during the combined desktop and field survey effort.

Based on a quantitative analysis of overlaid 'high value potential habitat' for the 11 threatened flora and fauna species and one TEC likely to occur in the Project study area, the total direct impact to 'high value potential habitat' is 2,800 ha (0.42% of habitat extent in the regional landscape defined as 137 km x 163 km region with the Project MLA as a centroid) and the total indirect impact to 'high value potential habitat' is 12,013 ha (1.79% of habitat extent in the regional landscape). This impact, when

compared to habitat availability in the regional landscape, and in combination with the proposed management and mitigation measures, is not likely to significantly impact MNES.

However, the results of the MNES assessment should be taken into consideration alongside the assumptions and limitations discussed in Volume 2, Appendix H, Section H.4.4.2 of this EIS. Actual impacts that will require offsetting as a result of the Project will differ from those presented in the report and it is expected that real impacts will be either in the order of reasonable best case scenario presented in the report or even less so. Further refinement and review of the habitat mapping, including assessment of additional site specific information, will be undertaken as part of planned ongoing studies. The updates will be available to inform the assessment of direct and indirect impacts, and finalisation of the offsets strategy.

0.11.10 Surface Water

The mine site is located within the Belyando/Suttor catchment, a sub-catchment of the Burdekin River. Sandy Creek is the main watercourse traversing the site and flows into the Belyando River north of the Project area. The Belyando River joins the Suttor River and eventually the Burdekin River at Lake Dalrymple (Burdekin Falls Dam). Four other defined watercourses flow into Sandy Creek within the Project area, including Little Sandy Creek, Rocky Creek, Middle Creek and Well Creek.

In conjunction with assessing the existing water environment and water uses, technical studies were undertaken to assess the potential impacts of the Project on hydrology, hydraulics, geomorphology, and water quality. Relevant aspects of the Project include water supply, stream diversions, flood protection, sewage and stormwater, and mine water management including containment, reuse, treatment and discharge.

Preliminary water balance modelling has shown the mine water management system proposed for the Project will be unable to supply all water requirements on-site and that make-up water will be required to sustain operations. It is expected that the make-up water supply will be sourced from a combination of groundwater pumped from the advance mine dewatering, and a new bulk supply pipeline operated by SunWater from Moranbah. With these arrangements the Proponent will not be seeking to extract natural flows from the local watercourses.

Diversion of Little Sandy Creek and Rocky Creek to Middle Creek will be required for the open-cut component of the operations. Levee banks will be required to protect the open-pit mine voids areas from flooding. The diversion designs will aim to minimise the effect on watercourse ecology and geomorphology.

Runoff containment systems will capture and contain mine-affected water and prevent the need for controlled discharges. The system will allow mine water to be collected and reused in mine operations, reduce requirements for external water supply, and allow dewatering of mining areas to sustain safe operating areas. The system design takes into account the catchments, local climate, runoff volumes, dewatering volumes, usage demands and discharge criteria. Water within the mine site will be segregated according to its quality to optimise its storage and preferential reuse to minimise the potential for impacts on the environment.

Site water infrastructure will be designed, constructed and operated in accordance with regulatory requirements. The current designs will be further developed to obtain the required approvals that occur after EIS approval, such as separate approvals for stream diversions, flood protection levees (as

regulated structures) and hazardous dams. Further investigations will be undertaken to assess the geotechnical conditions at various locations and suitability of materials for construction.

Implementation of the mitigation measures incorporated into the EIS will ensure impacts on hydrology (local water course stream flow), surface water quality, flooding and stream stability (geomorphology) are minimised.

0.11.11 Groundwater

The majority of groundwater use in the study area is for agricultural activities, predominantly for stock watering supply. The groundwater has metals and metalloids (arsenic, aluminium, iron and manganese) that exceed drinking water guidelines and is not suitable for consumption without treatment. However, a bore survey indicated that groundwater is used as a drinking water source.

Mining will occur below the regional water table and it will be necessary to remove groundwater in advance of operations to allow mining to occur safely to the intended depth and method of operation. Mine dewatering will also be required for geotechnical reasons such as to depressurise pore water pressure behind the open-cut pit walls and below the floor of the mine, to prevent slope failure and floor heave and to prevent uncontrolled inflows into the mine. It is anticipated that all groundwater removed will be utilised as mine water supply.

Mine dewatering will affect the local groundwater regime and may cause a decline in groundwater levels, alter flow patterns, and impact on discharge mechanisms beyond the limits of the site. Initial modelling indicates that groundwater level impacts may be experienced at distances up to 10 km from the mine during operations, elongated along strike in a north-south direction.

The Project will develop make-good (alternate) water supply agreements with landholders that are impacted by mine dewatering. They will be provided with an alternate water supply of comparable yield and quality.

0.11.12 Air Quality

Air emissions from the Project will be primarily generated from surface-based activities that move overburden and coal. The main emission of concern is particulate matter, and to a lesser extent, emissions associated with the combustion of diesel fuel in mobile equipment. However, vehicle exhaust emissions are not considered to be emitted in sufficient quantities to impact significantly on air quality at these locations.

Atmospheric dispersion modelling indicated that when considered in combination with existing (background concentrations), dust emissions from the Project would result in an exceedance of the 24 hour PM_{10} criterion at a single receptor during Year 1 and Year 5 of the Project operations. However, when considered cumulatively with the Alpha Coal Project, impacts were predicted to be significantly higher than those from the Kevin's Corner Project in isolation. For the two years considered in the cumulative assessment (Year 5 and 25) it was predicted that dust emissions from the Alpha Coal Project would already result in exceedances of the 24 hour PM_{10}criterion at 8 of 10 receptors. Therefore, the Project is predicted to cause no new exceedances of the Environmental Protection Policy (EPP) (Air) objectives or Project goals at any receptors in addition to those predicted to be impacted by the Alpha Coal Project.

The Proponent will implement an air quality management plan, which would include specific measures for the monitoring and mitigation of potential particulate and dust impacts, to minimise the on-site generation of particulates.

0.11.13 Greenhouse Emissions

Greenhouse gas emissions from the mine have been calculated for Scope 1 and Scope 2 emissions in accordance with the *National Greenhouse and Energy Reporting Act 2007*. Scope 1 emissions include coal seam gas fugitive emissions gas and emissions from vehicles, stationary energy and explosives. Scope 2 emissions relate to the generation of electricity used by the Project. Mine emissions are expected to peak in year 18 of mine operations and at that time are estimated to be 0.42% of the Australian national total or 3.36% of the Australian mining sector total.

Consistent with national and state objectives the Proponent will implement strategies to maximise energy conservation and minimise emissions arising from mining activities. These will be developed during the detailed design stage of the Project and will include selection of energy efficient systems and equipment, automation, and procedures to maximise operating efficiencies.

0.11.14 Noise and Vibration

Noise and vibration emissions from construction and mining operations would be primarily generated by construction and mining equipment, the on-site coal handling and preparation plant, off-site road traffic, rail and aircraft movements , and the underground mine ventilation plant. The use of explosives for blasting would also generate air blast overpressure and ground vibrations.

Modelling indicates that the proposed operational and construction activities would comply with the established noise and vibration criteria at all existing receptor locations without the requirement for any specific mitigation measures. Notwithstanding this, practical measures to effectively reduce construction and operational noise emissions from the site have been identified.

Due to its proximity to the mining areas, exceedances of the operational and nominated construction noise limits are predicted at the proposed on-site accommodation village. The key amenity issue for the accommodation village is sleep protection as limited external activity is expected and its primary function is to provide sleeping facilities for mine workers between shifts. Acoustic design requirements have been provided for the accommodation village, in order to ensure satisfactory internal noise limits and sleep disturbance criteria are achieved within the sleeping areas.

It is predicted that adoption of appropriate blasting controls will ensure compliance with the relevant blasting noise and vibration control guidelines at all receptor locations.

The predicted increase in off-site road traffic volume due to the proposed construction and operation is significant. Whilst full compliance with the relevant road traffic noise criteria is predicted during all construction and operational stages, noticeably increased noise levels are likely to be perceived by the most affected receptors.

Full compliance with the nominated rail noise and vibration and aircraft noise criteria is predicted at all receptor locations.

With the incorporation of recommended mitigation measures, noise and vibration impacts from construction activities and operation of the proposed mine are not expected to significantly degrade the existing acoustic environment nor create undue annoyance to the surrounding community.

0.11.15 Waste

The key general waste management objective is to manage waste to minimise direct and indirect impacts on the environment or health of people working at the mine or living in the community. Key strategies will include waste minimisation, cleaner production, source segregation for recycling, and safe disposal of wastes at appropriately licensed facilities. To reduce the long-term burden on regional council landfills, an engineered landfill will be constructed on-site to effectively manage the wastes generated from the Project that cannot be reused or recycled. A wastewater treatment plant (WWTP) will be constructed on-site to treat sewage and industrial wastewaters for reuse on-site, or subsurface irrigation.

The bulk overburden produced by mining is classified as non-acid forming (NAF) and will be stored in out-of-pit spoil emplacement areas in the early years of operations, and revert to in-pit placement when sufficient space is available to allow mining to continue safely. Any saline and/or sodic overburden materials will be placed within the core of the emplacement areas before covering with more benign materials, reshaping and adding topsoil and revegetating as part of rehabilitation. Coarse rejects material from the coal preparation plant may be potentially acid forming (PAF) and, if so, will be compacted, lime amended and encapsulated in the spoil emplacements. Fine rejects (or tailings) from the coal preparation plant will initially be placed in a purpose built tailings storage facility that will be located near the Northern open-cut pit. Longer term tailings storage will be in the Northern open-cut pit void once mining activities are completed within five to seven years of commencement of operations. Tailings will be in a slurry form containing approximately 30% solids, and excess water will be recycled to the coal processing plant. Geochemical test results indicate that some tailings may have a low capacity to generate acid. HGPL will consider lime amendment of PAF tailings materials if their occurrence is more widespread than currently predicted and tailings materials generate pH values less than 5.0. The tailings storage facility will be designed to ensure that risks of seepage to the groundwater system are minimised.

Other site wastes will be managed at a suitably located on-site waste disposal and segregation facility.

0.11.16 Transport

The traffic and transport assessment undertaken as part of the EIS determined that the performance of both the major road links and their intersections used to service the mine will not be significantly impacted by the mine and that no specific mitigation measures will be required.

Increased traffic volumes arising from construction and operations activity will have some direct impacts upon the design life and ongoing maintenance of roads in the immediate vicinity of the Project, including Clermont-Alpha Road, Jericho-Degulla Road and Degulla Road.

It should be noted that for the purposes of this assessment the southern boundary of the Project site (i.e. southern access point) intersects with the Jericho-Degulla Road. However, upon completion of both the Kevin's Corner and Alpha Coal Projects the access from the public road network to both sites will be via Degulla Road due to the closure of sections of the public road network and the construction of bypasses.

Alternate methods of transport to the site, such as the proposed on-site airport, have been considered and this is briefly discussed in this assessment.

Consultations with Barcaldine Regional Council and with the Department of Transport and Main Roads will be conducted to resolve matters related to road upgrades, diversions and maintenance programs.

0.11.17 Indigenous Cultural Heritage

The *Aboriginal Cultural Heritage Act 2003* (ACH Act) (ACH Act) imposes a cultural heritage duty of care on development proponents with respect to Aboriginal cultural heritage. HGPL is required under Part 7 of the ACH Act to prepare an approved Cultural Heritage Management Plan (CHMP) to meet its cultural heritage duty of care.

Indigenous cultural heritage issues have been addressed in a phased approach, which commenced with the development of a CHMP, in consultation with the Wangan & Jagalingou people, and is proceeding into cultural heritage inspections and surveys and the development of management plans that encapsulate survey results and provide direction on management.

Impact on recognised and potential cultural heritage sites by the Project will result from land disturbance related to two open pits, development of the tailings dam, overburden emplacements and the subsidence from the three underground mines.

Sites of significance have been located on-site and care will be taken to minimise impact to these important sites. The CHMP provides the Wangan & Jagalingou people and HGPL with guidance on what course of action to follow in the event that new cultural heritage sites are identified during operations. This process, in conjunction with a cultural awareness program incorporated into the contractor/employee manual, the preparation of an induction manual and cultural heritage induction for Project staff, will provide management procedures for all new finds of cultural heritage during construction and mining operations. In addition, the CHMP provides guidance on the process that should be followed in the event that development of the Project accidentally discovers human remains.

0.11.18 Non-Indigenous Cultural Heritage

A non-indigenous cultural heritage survey and assessment of the Project area have been undertaken. This has included a field survey of the study area; identification of sites and places of non-Indigenous cultural heritage significance; determination of their level of cultural heritage significance; and the provision of recommendations for the management of the heritage values of those sites and places and any other potential areas of cultural heritage significance.

Six non-Indigenous cultural heritage sites were identified within the study area. Two sites were located just outside of the MLA 70425 boundary and have been identified as sites that may be located in the vicinity of off-site Project infrastructure, specifically the rail corridor.

The study area contains evidence of a linear site or cultural route – the 19th Century Clermont to Aramac coach route.

This assessment concluded that the study area has high potential to contain further sites and places of archaeological significance relating to the settlement of the area through the mid-to-late 19th Century into the early 20th Century.

The sites have been assessed as having low significance, except for the Burgess Hotel site, which has an amplified grading owing to its association with the coach route. Generally, all identified sites would have limited research potential in their ability to contribute new or substantial information about the site that could not be obtained from other sources.

Proposals to mitigate the potential impacts by the Project have been provided.

0.11.19 Social

The social impact assessment found that mining impacts can be managed through implementation of an effective social impact management plan (SIMP).

The assessment indicated the mine will generate mostly positive impacts because mining activities will contribute to the local economy whilst being sufficiently removed from the community of Alpha (the nearest town) to prevent an unmanageable population boom. The Project is far enough away from Alpha not to have direct impacts due to the proposal to accommodate the Project's workforce on-site. There are also significant limiting factors in the community that reduce the likelihood of an unmanageable population boom. These are:

- Limited land available for expansion – the south and west area of Alpha town is flood prone;
- Limited electricity available to supply the community;
- Limited water supply for the community;
- Lack of an integrated community sewerage system;
- Limited businesses to support an increased population;
- Limited available services;
- Limited schooling and child care; and
- Limited opportunities for spouses/partners and families of potential mine workers.

Potential negative impacts are likely from increased traffic movements and perceived changes for the region.

The SIMP will manage potential social impacts in the local region through a multi-phased approach. Phase 1 is the template for the SIMP that is included in the EIS. Phase 2 is the details of the SIMP in consultation with key stakeholders; and Phase 3 is implementation, monitoring and ongoing adaptation.

A regional study confirmed that Isaac Regional Council and Central Highlands Regional Council will be positively affected due to increased employment and business opportunities. These in turn will lead to potential population stability through increased opportunities.

0.11.20 Economics

The Project will result in positive economic impacts throughout the regional, state and Australian economies. The stimulus created by the Project resulting from mine construction and operation will

generate significant output, household income, employment and value added effects throughout the Queensland economy. The major economic impacts of the Project include:

- Peak employment of 4,105 full time equivalent positions during construction throughout the Queensland economy;
- Peak employment of 7,258 full time equivalent positions during operation throughout the Queensland economy;
- Peak value added effects of approximately $424.40 million during construction and approximately $984.66 million during operation;
- Once fully operational, the coal mine will produce between 25 million tonnes per annum (Mtpa) and 30 Mtpa of coal exports, equating to a value of $2.7 billion per annum;
- A total export of approximately 856 million tonnes (Mt) of coal for export from Queensland throughout the life of the mine, with a value of approximately $67.8 billion; and
- Significant state and Commonwealth government taxes and royalties.

0.11.21 Decommissioning and Rehabilitation

Decommissioning and rehabilitation of the mine will take into consideration the requirements for final landforms, landscape amenity and sustainability. Key aspects relating to rehabilitation include:

- Control and management of mine waste;
- Void management;
- Management of subsidence affected areas;
- Diversions (road/track, creek and stock route);
- Sustainable rehabilitation methods for the disturbed areas;
- Management of topsoil resources for use in rehabilitation of the site;
- Progressive revegetation of areas across the mine site;
- Integration with ongoing and future rehabilitation activities across the wider mining area; and
- Rehabilitation monitoring and maintenance management.

Site rehabilitation will also include decommissioning and removal of plant and structures, buildings, haul roads, surface infrastructure required to support underground mining operations, dams and other redundant water management infrastructure.

0.11.22 Health and Safety

The Proponent is committed to providing a safe and healthy working environment for its employees, contractors, and visitors and to operating the mine with minimal impacts upon the environment and community. The health, safety, environment, community and heritage matters will be managed through implementation of the Proponent's integrated management system.

0.11.23 Cumulative Impacts

The cumulative impact assessment was carried out for each environmental value using the methodology outlined in Volume 2, Section X.3. The results of the cumulative impact assessment are summarised in Table 0-1.

A number of environmental values were identified as having low cumulative impact. This was mainly due to the location and geographical separation of different projects and the environmental management strategies proposed to be implemented by the Kevin's Corner Project. For a number of the environmental values the cumulative impacts were assessed as medium and high. These can be managed by the application of strict mitigation measures and targeted monitoring programs.

Table 0-1: Summary of cumulative impacts - Kevin's Corner Project

Environmental Value	Cumulative Impact Assessment
Land	Medium
Land Use	Medium
Landscape Character	Low
Nature Conservation	Low
Surface Water	High
Groundwater	Medium
Air Quality	Medium
Greenhouse Gas	Medium
Noise and Vibration	Low
Solid Waste	Low
Traffic and Transport	Medium
Non-Indigenous Cultural Heritage	Medium
Indigenous Cultural Heritage	Medium
Social and Community	High
Hazard and Risk	*
Economics	High

* Not assessed, as all of the hazard and risk issues were contained on-site and were not applicable to a cumulative impacts assessment.

0.12 Management Strategies and Commitments

As part of the Proponent's management strategies and commitments, an EM Plan and SIMP have been prepared as part of the EIS documentation.

0.12.1 Environmental Management Plan

An EM Plan will be developed and implemented in accordance with Section 201 of the *Environmental Protection Act 1994*. The commitments in the EM Plan will be measurable and auditable and the plan will define strategies to achieve the stated requirements. A draft EM Plan has been included in Volume

1, Section 28 of this EIS providing an indication of the content of the EM Plan to be finalised before the commencement of operations.

0.12.2 Social Impact Management Plan

The SIMP has been developed in a phased approach. A draft SIMP has been developed as part of the EIS. The first phase is the foundation based on key findings within the social impact assessment (SIA). This foundation is the draft SIMP provided in this EIS (Volume 2, Appendix T and Volume 1, Section 29). Phase 2 will be implemented after the EIS submission, and will include key stakeholders input into the details of the management strategies. Phase 3 will be the implementation, monitoring and ongoing adaptation. The SIMP process will be undertaken in consultation with Queensland Government's Social Impact Assessment Unit and other key stakeholders.

0.12.3 Proposed Commitments

As part of the EIS approvals process the Proponent has committed to develop and operate the Project in accordance with the appropriate regulatory requirements and approved management plans. The Proponent's commitments are stated in the EIS, and will ensure the Project will be designed and implemented to mitigate potential negative impacts to social, economic and environmental values while aiming to enhance positive impacts at every opportunity.

0.13 Relevant Legislation and Policy Requirements

The Project has been deemed a Significant Project under the provisions of the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The preparation of the EIS and the public notification and consultation activities are in accordance with the assessment process as set out at Sections 26-35 of the Act.

The land that will be affected by the Project contains matters that are potentially of national environmental significance. As such the Project was referred to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) and has been declared a "controlled action" in accordance with the provisions of the EPBC Act. These matters are described by the EPBC Act as:

- Listed threatened species and ecological communities (Sections 18 and 18A); and
- Listed migratory species (Sections 20 and 20A).

Approval of the declared "controlled action" and EIS, under bilateral agreement between the Commonwealth and Queensland Governments, recognises the Queensland EIS process under the SDPWO Act as an appropriate process pursuant to Section 87 of the EPBC Act.

Table 0-2 present the two primary approvals sought though this EIS.

Table 0-2: Key legislative and policy requirements applicable to the Project

Item	Legislation	Relevant Approval	Status
Mine	*Mineral Resources Act 1989*	Mine Lease for MLA 70425	Awaiting assessment of EIS
Mine	*Environmental Protection Act 1994*	Environmental Authority for mining lease	Awaiting assessment of EIS