South Galilee Coal Project
Initial Advice Statement
May 2010

AMCI

BANDANNA ENERGY

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

AMCI (Alpha) Pty Ltd (AMCI) and Alpha Coal Pty Ltd (Bandanna) are seeking to establish a new coal mine on two of their exploration tenements near Alpha in the Galilee Basin. The mine will produce up to 20 Million tons per annum (Mtpa) of high volatile, low sulphur steaming coal for export to international markets. The Project is referred to as the South Galilee Coal Project (SGCP).

The project is located immediately south-west of the township of Alpha, which is approximately 160 km west of Emerald and 450 km west of Rockhampton, as shown in **Figure 1-1**.

The SGCP will target thermal coal at depths suitable for both open cut and underground mining. Current exploration has identified a JORC compliant thermal coal resource of 982 Mt, with potential for significant additional resources. The currently proposed mine life is 43 years. The Proponent will continue to explore the areas of its mining tenements to further quantify the coal resource and quality to assist in mine planning.

The Proponent is currently undertaking a feasibility study incorporating an iterative process whereby the findings from the environmental studies will be incorporated into the project planning process. Specific operational criteria will be determined upon completion of the necessary exploratory, environmental and feasibility assessments and will be fully detailed in the EIS documents.

1.2 THE PROPONENT

The SGCP will be developed by joint venture participants AMCI (Alpha) Pty Ltd and Alpha Coal Pty Ltd, which is a wholly owned subsidiary of Bandanna Energy Limited (Bandanna).

AMCI is the manager for the feasibility and EIS approval processes.

1.3 GALILEE BASIN DEVELOPMENT

The remote location of the Galilee Basin and the corresponding lack of existing infrastructure has previously precluded large scale coal mining in the region. However, increased demand for low cost and reliable thermal coal and associated firming of contract prices since 2008 has renewed interest in coal exploration in the area.

Early project assessments have identified a number of significant challenges for development of the SGCP in the Galilee Basin area, including:

- availability of water resources;
- supply of electricity;
- lack of an existing high capacity rail transport system to a suitable port; and
- availability of port allocation.

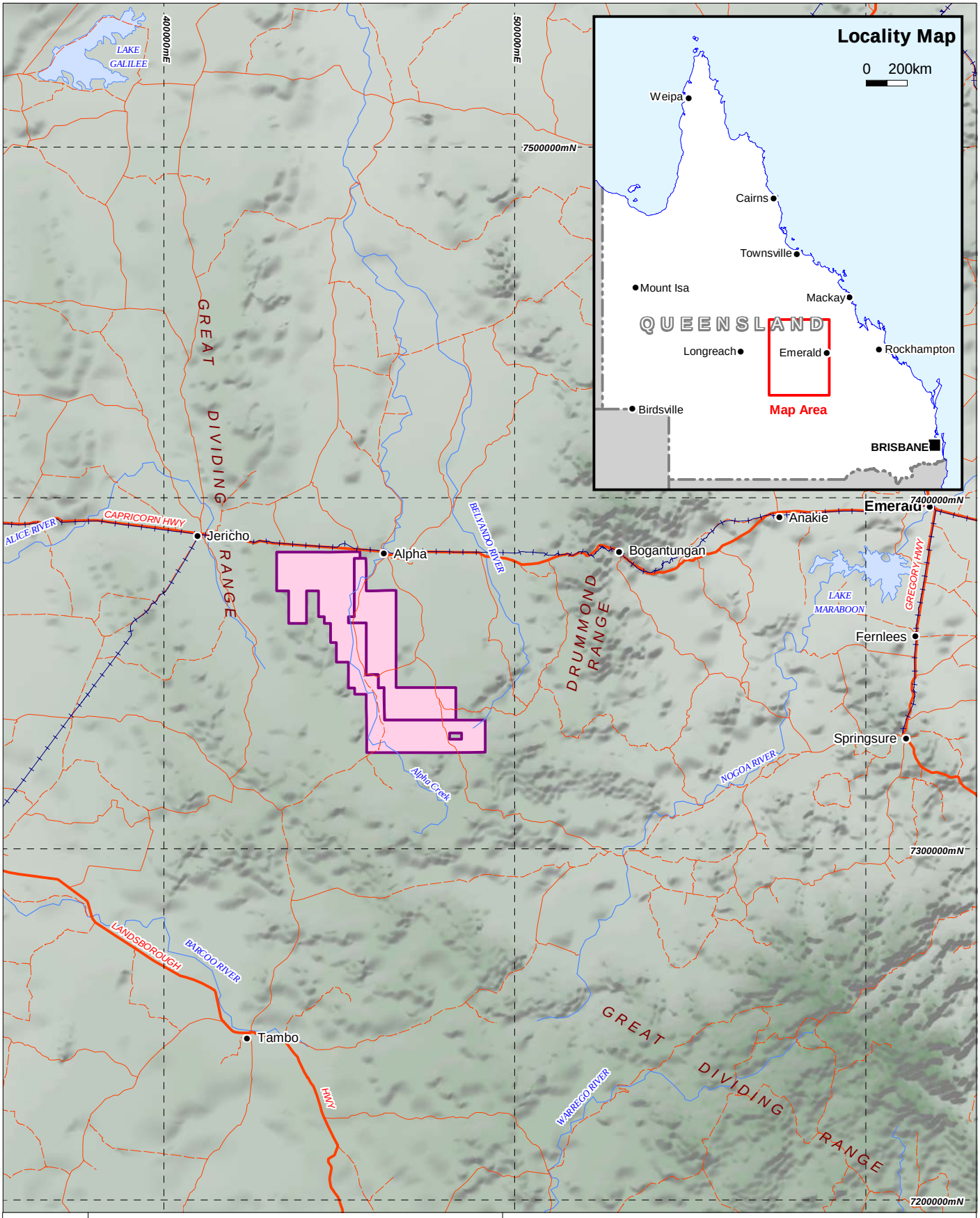
In addition to the Proponent, both Hancock Prospecting Pty Ltd (Hancock) and Waratah Coal Pty Ltd (Waratah) have lodged Initial Advice Statements and are currently preparing Environment Impact Statements as part of the mining approval process, prior to establishing new mines in the Galilee Basin. Both of these projects have identified construction of associated port, rail, water and power supply infrastructure as major parts of their projects. Rather than competing with these projects, the Proponent believes there is opportunity to share port, rail and potentially other infrastructure facilities with these and other Galilee Basin developments and thereby optimise infrastructure use and development of the Galilee Basin resources to the benefit of all. The Proponent advocates a co-operative approach to development of infrastructure servicing the region and has commenced discussions with regulators and other project developers to this end.

1.4 PURPOSE AND SCOPE OF THE INITIAL ADVICE STATEMENT

This Initial Advice Statement (IAS) has been developed to provide a preliminary overview of the project concepts and the nature and extent of the economic, environmental and social impacts which may be associated with the construction and operation of the proposed SGCP as far as they can be foreseen at the conceptual stage of project planning. Additionally the IAS identifies the key statutory approvals which may be required for the project and the appropriate environmental, social and other studies which may be required to support the project through the approval process.

The purpose of this IAS is to provide sufficient information to:

- enable stakeholders, including the general community, to determine their level of interest in the Project;
- assist the Coordinator General to make a decision on a declaration of the SGCP as a Significant Project under Section 26 of the Queensland *State Development and Public Works Organisation Act 1971* (SDPWO Act); and
- assist the Department of Infrastructure and Planning (IPA), on behalf of the Coordinator General, in preparation of the Draft Terms of Reference (TOR) for an Environmental Impact Statement (EIS) for the proposed project.



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LEGEND

- Project tenement
- Principal road
- Road (sealed)
- Road (unsealed)
- Railway
- Watercourse
- Major lake
- Town

29/04/2010

Data Source:
Tenement - EEDI. Topography (250k) - Geoscience Australia.

Alpha Coal Pty Ltd

South Galilee Coal Project

Regional location plan

0 25 50
Kilometres

Scale: 1:1,500,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 1-1

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2 THE PROPOSAL

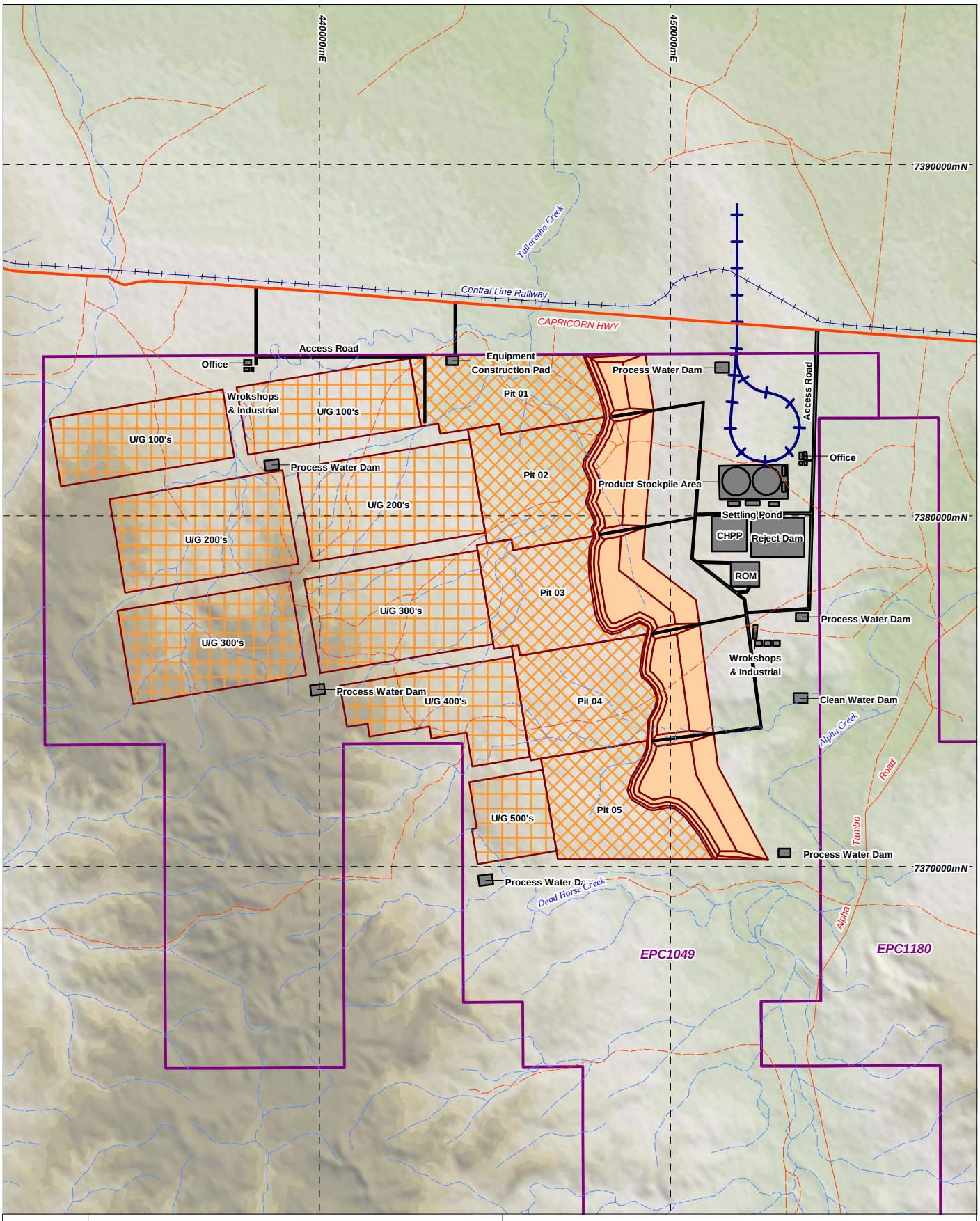
2.1 PROJECT DESCRIPTION

The Proponent will develop the final mine plan once all relevant studies have been completed and assessed, however initial studies have confirmed that the relevant coal seams can be mined using existing proven technologies.

At this stage, it is expected that the SGCP would consist of the following operational aspects:

- coal mining – mining of coal will be at a maximum of 20 Million tonne per annum (Mtpa) of run-of-mine (ROM) coal. Mining may include both open-cut and underground mining processes for extraction of the coal resource;
- coal processing – the mined coal will be transported and stockpiled in a ROM area prior to processing via a Coal Handling & Preparation Plant (CHPP) facility. Processing involves separation of the coal and waste materials through screening, crushing, grinding, washing and dewatering. Coal reject materials (coarse and fine) would be transferred to appropriate containment facilities;
- product coal – the processed coal will be conveyed and stockpiled for transport via a rail load-out facility;
- mine infrastructure – infrastructure would include a mine office, bath house, workshops and re-fuelling facilities, power lines, communication facilities and associated amenities;
- water supply infrastructure – water requirements for the Project will be assessed as part of the feasibility studies. Options for groundwater usage, process water re-use and recycling, waste-water treatment and other internal water supply options will be assessed. An external raw water supply is likely to be required, with a pipeline from the Burdekin Dam or the proposed Connors River Dam the current options. All available water supply options will be assessed and detailed in the EIS document;
- water management infrastructure – the Project will plan to ensure that uncontaminated runoff water and impacted operations water remain separate wherever possible. Where required, clean water diversions and sediment ponds will be constructed to prevent or minimise runoff water being impacted by mining operations;
- rail facilities and port allocation – rail facilities and port allocation are not currently available but will be required for the Project to be viable. The Project will include a connection to a 'common user rail facility' that will connect the Galilee Basin to the Abbott Point Coal Terminal. The Proponent is currently proposing to work with the State Government and the two major resource companies, who have existing proposals for the development of rail and port infrastructure to service the region, to help develop and/or utilise the required infrastructure;
- roads – both exterior site access roads and interior haul roads will need to be developed for the mine. Road base and ballast material will need to be sourced for mine construction and operation. If suitable material is identified onsite a quarry may be developed within the proposed Project area, alternatively the existing hard rock quarry located on the Proponent's EPC1180 will be assessed for material quality and adequate capacity to meet the project and existing requirements. Details of these assessments will be provided in the EIS; and
- construction and operations accommodation – development of accommodation facilities will be undertaken as required based upon social, economic and environmental considerations.

Figure 2-1 provides a conceptual plan of the proposed SGCP site layout, including the extent of conceptual open-cut and underground mining. **Figure 2-2** shows a conceptual infrastructure corridor that will allow water, rail and potentially power infrastructure to connect from this Project to whichever of the relevant external proposals are approved and constructed. The actual area of the corridor is likely to be significantly smaller than what has been allowed for at this stage.



LEGEND

- Principal road
- Road (sealed)
- Road (unsealed)
- Railway
- Watercourse
- Project EPC tenement
- Proposed pit
- Proposed underground
- Proposed dump
- Proposed infrastructure
- Proposed rail loop

Data Source:
DEM (SRTM), Infrastructure - Minserve. Tenement - EEDI.
Topography (250k) - Geoscience Australia.

29/04/2010

Alpha Coal Pty Ltd

South Galilee Coal Project

Conceptual site layout

0 3 6

Kilometres

Scale: 1:150,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 2-1

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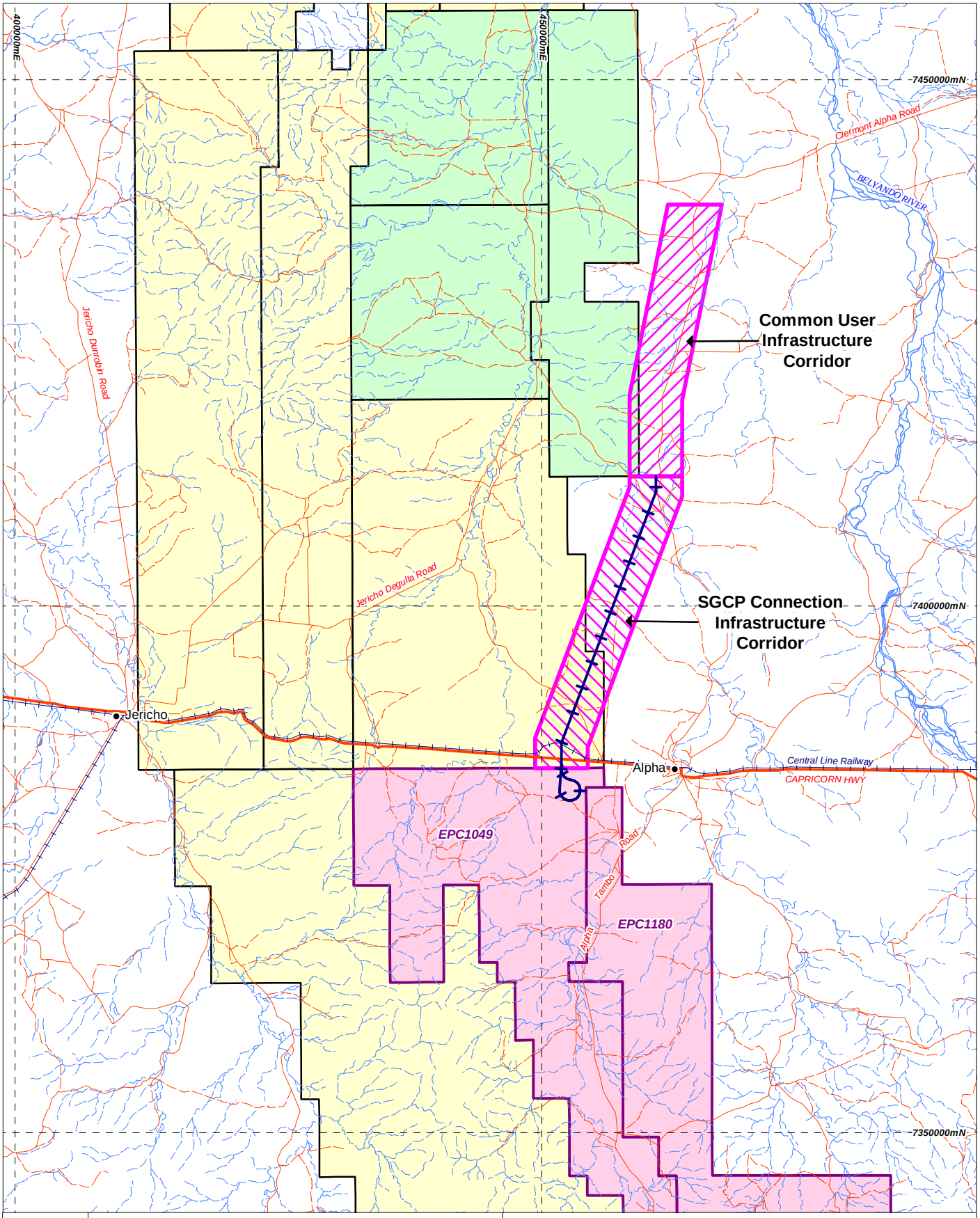

LEGEND

- Principal road
- Road (sealed)
- Road (unsealed)
- Railway
- River
- Watercourse
- Project EPC tenement
- Waratah Coal tenement
- Hancock Coal tenement
- SGCP rail connection
- Conceptual location of common user infrastructure corridor
- Conceptual location of SGCP connection infrastructure corridor

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04/05/2010

Data Source:
Tenement - EEDI. Topography (250k) - Geoscience Australia.

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Alpha Coal Pty Ltd

South Galilee Coal Project

Conceptual infrastructure corridor

0 10 20

Kilometres

Scale: 1:500,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 2-2

2.2 MINING AND EXPLORATION TENURES

The status, grant, expiration dates and sub-block area of each of the EPCs related to the SGCP are detailed in **Table 2-1** below and the areas shown in **Figure 2-3**. The Proponent holds two adjoining exploration tenures (EPC 1179 and EPC 1048) however these are not proposed for inclusion in the SGCP.

Table 2-1 Proposed South Galilee Coal Project Tenures

EPC Tenure No.	Status	Grant Date	Expiration Date	No. of Sub-blocks
1049	Granted	28 November 2007	27 November 2011	286
1180	Granted	18 December 2008	17 December 2010	152

2.3 JUSTIFICATION FOR THE PROJECT

2.3.1 Galilee Basin Coal Resources

The Galilee Basin is the last remaining major coal province yet to be developed in Queensland. It has significant coal resources which may be utilised through a range of extraction processes including coal mining and potentially coal to liquids.

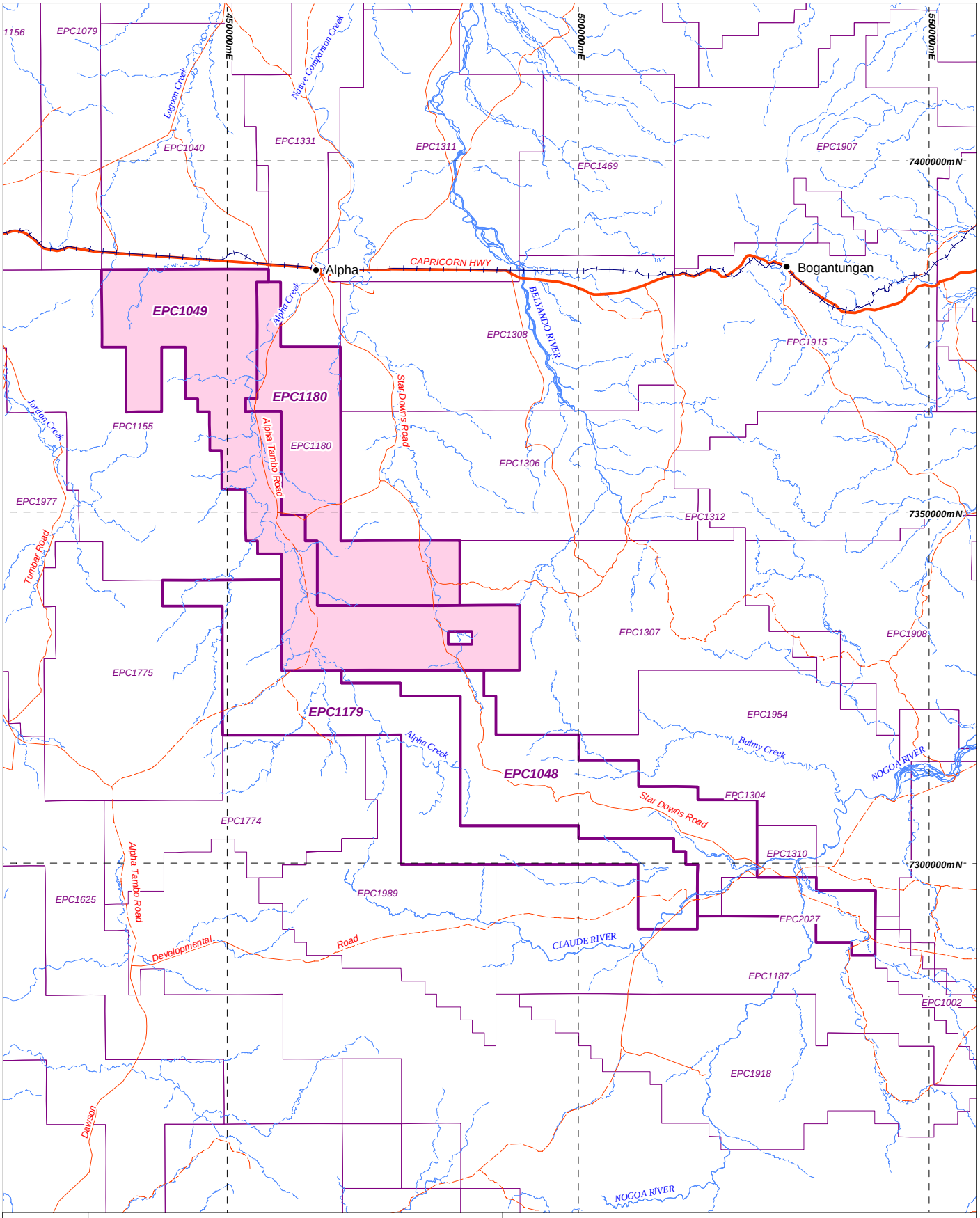
The SGCP coal deposit lies at the southern end of the Galilee Basin within the late Permian Colinlea and Bandanna Formations. The Galilee Basin is a significant coal field covering 247,000 km^2 in Central Queensland, as shown in **Figure 2-4** and is estimated to have over 100 Billion tonnes of thermal coal resources.

2.3.2 Coal Export Demand and Markets

Over the last decade, global demand for thermal coal has increased due to the commodity's relatively low cost and stable supply. Demand is anticipated to grow at 3-5% per annum over the next 10-15 years. It is expected that this will be driven by developing Pacific Rim markets to which Queensland is a major supplier, for example China is expected to double its coal fired, electricity generating capacity over the next 20 years.

In the 2009 Australian Bureau of Agricultural and Resource Economics (ABARE) report, figures show Australia's black coal production increased at an average annual rate of 3.2% between 2003-04 to 2007-08. In 2007-08, earnings from Australian coal exports increased by 11% from the previous year due to higher volumes shipped and higher contract prices. Earnings from metallurgical coal exports are estimated to have increased by 5% to $15.8 billion and thermal coal export earnings by 23% to $8.3 billion. Australian thermal coal export volumes are estimated to have increased by 6% to 122 Mtpa in 2008-09. Growth in demand for thermal coal imports in Asia is forecast to continue, particularly in China, India, the Republic of Korea and Malaysia.

Queensland has also increased exports of thermal coal due to strong global demand. In the twelve months to June 2009, thermal coal exported to China alone increased by 561% from the previous year, with export earnings going from approximately $50 million to over $400 million. Total export earnings for thermal coal went from approximately $2.8 billion for the 2007-08 financial year, to almost $6.8 billion for the 2008-09 financial year. (Department of Employment, Economic Development and Innovation, Monthly Mining Statistic Tables for June 2009). The State's thermal coal is typically high in calorific value, has moderate ash levels, is low in sulphur and heavy metal content and is highly desirable in international coal markets. Demand for coal is likely to remain strong given its suitability as a relatively cheap and stable source of energy and heating. Queensland's thermal coal is exported to more than 30 countries and annually generates well over $1,000 million in royalties. Due to the increased global demand for energy the Galilee Basin is well positioned to be a long term supplier of thermal coal to the international markets and specifically Asia.



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LEGEND

- Project EPC tenement
- Proponent EPC tenement
- Other EPC tenement
- Principal road
- Road (sealed)
- Road (unsealed)
- Railway
- River
- Watercourse

29/04/2010

Data Source:
Tenement - EEDI. Topography - Geoscience Australia.

Alpha Coal Pty Ltd

South Galilee Coal Project

Tenement plan

0 15 30

Kilometres

Scale: 1:750,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 2-3

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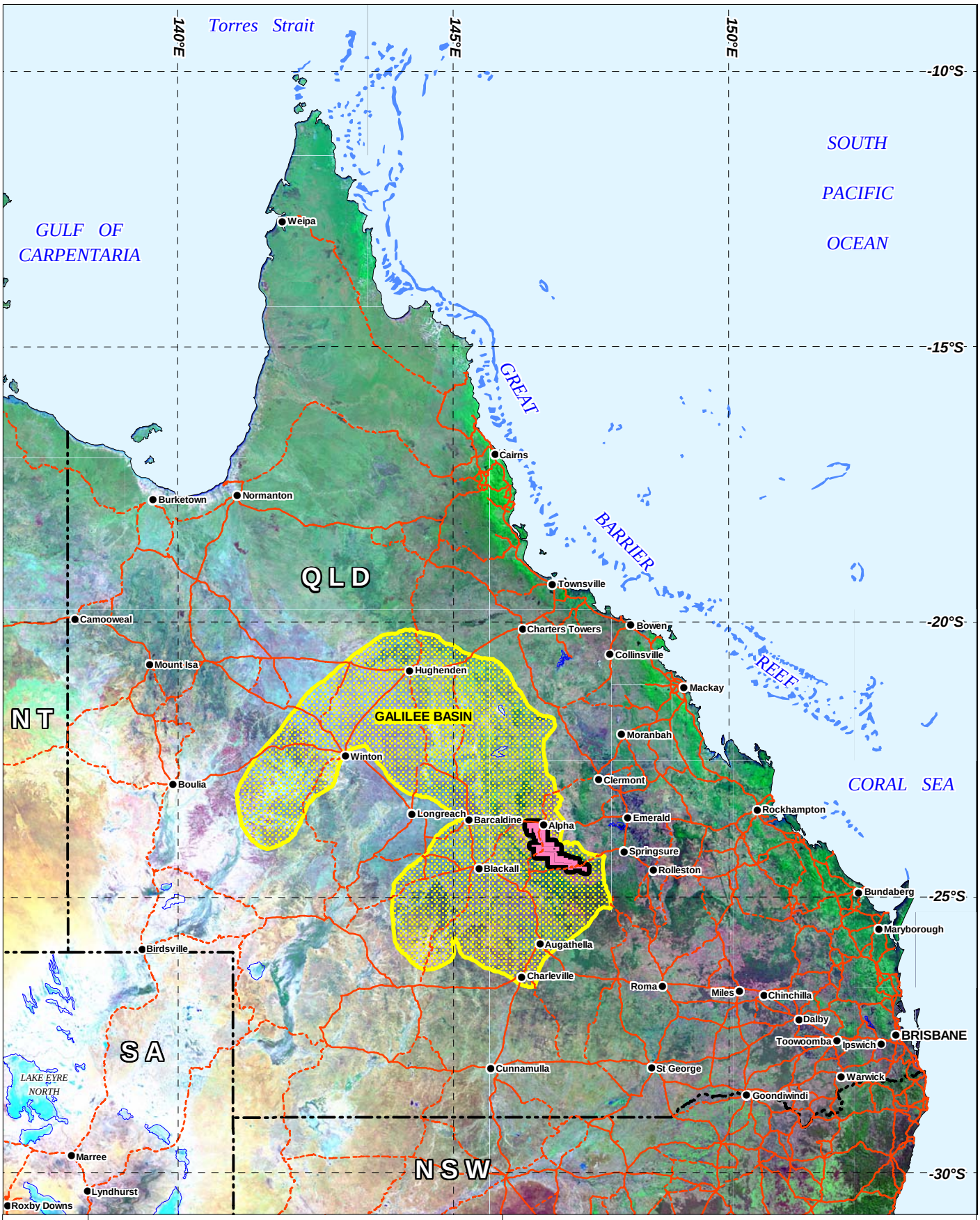

LEGEND

- Proponent tenement
- Road (sealed)
- Road (unsealed)
- Major lake
- Town

Data Source:
Landsat7 Mosaic300 Imagery - Geoscience Australia.
Geological Basins - Geoscience Australia.

29/04/2010

Alpha Coal Pty Ltd

South Galilee Coal Project

Galilee Basin

0 200 400

Kilometres

Scale: 1:10,000,000 (A4)

Datum: GDA94
Projection: Long/Lats

FIGURE 2-4

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2.3.3 Project Rationale

The Galilee Basin and its coal resources are currently undeveloped, and export demand for good quality thermal coal from Australia presents an opportunity to develop this area. The SGCP meets Queensland Government objectives in realising the timely development of the Galilee Basin whilst ensuring the community benefits and environment objectives are supported.

Queensland will benefit from the development of the mine through long-term contributions of royalties to the State economy, direct and indirect employment and small business opportunities in areas surrounding the SGCP. The SGCP aims to positively influence and benefit the Alpha community and the surrounding Central Highlands and Barcaldine regions.

It is anticipated the SGCP will require a total project investment of approximately $1.5 billion, excluding associated port and rail costs. The SGCP is expected to employ 2,000 people during construction and a permanent work force of 750 people will be employed to operate the mine. It is projected a significant number of support jobs will be created for local and state suppliers and contractors in addition to the increased employment opportunities directly resulting from the mine.

The project has the potential to generate significant economic benefit on a national, state and regional scale as a result of:

- the employment of 2,000 people during construction and 750 permanent people during the operation of the project;
- financial input towards, and ongoing support of, additional new rail, port and other infrastructure in Queensland;
- government revenue collected by way of income taxes, royalties and other charges;
- the generation of export income;
- local expenditure of employee's disposable incomes;
- expenditure by the mining operation in terms of goods, local resources and services for the construction and operation stages; and
- increased regional development.

2.3.4 Project Alternatives

Whilst numerous development and mining options will be assessed as part of the feasibility and environmental approval processes, they are variations on the project, not an alternative to the project. There are no viable alternatives to the Project without foregoing or sterilising the resource.

The only alternative is that the Project does not get approval and does not progress. In this case the resource is not recovered and the mining industry in Australia does not secure lucrative long-term markets in the Pacific Rim. These markets will potentially be supplied by other countries which will gain the economic and social benefits described in **Section 2.3.3** above. The Queensland government will also lose revenue from royalties and the economic boost to the state from an influx of new jobs, both in construction and ongoing operations for the region.

2.4 PREVIOUS EXPLORATION AND RESOURCE ESTIMATE

Exploration has confirmed the SGCP resource is typical of the Galilee Basin, consisting of up to five principal coal seams from 2 m to 5 m and containing sub-bituminous highly volatile perhydrous coals. The conditions are ideal for high production open cut and underground mining. SGCP exploration to date has concentrated on the shallow coal suitable for open cut mining, but indications are that the coal resource will substantially increase as further exploratory drilling is completed.

Exploration to date has focussed on the northern end of EPC 1049, targeting the D1 and D2 coal seams. 100 chip holes and 50 cored holes have resulted in over 18,000 drilled metres within a 100 km^2 area. JORC compliant resources of 982 Mt have been confirmed within the two target coal seams. These announced resources are sufficient to justify the SGCP, with additional resources still to be explored down dip.

Exploration has confirmed the SGCP has significant resources of thermal coal within a premium location of the Galilee Basin.

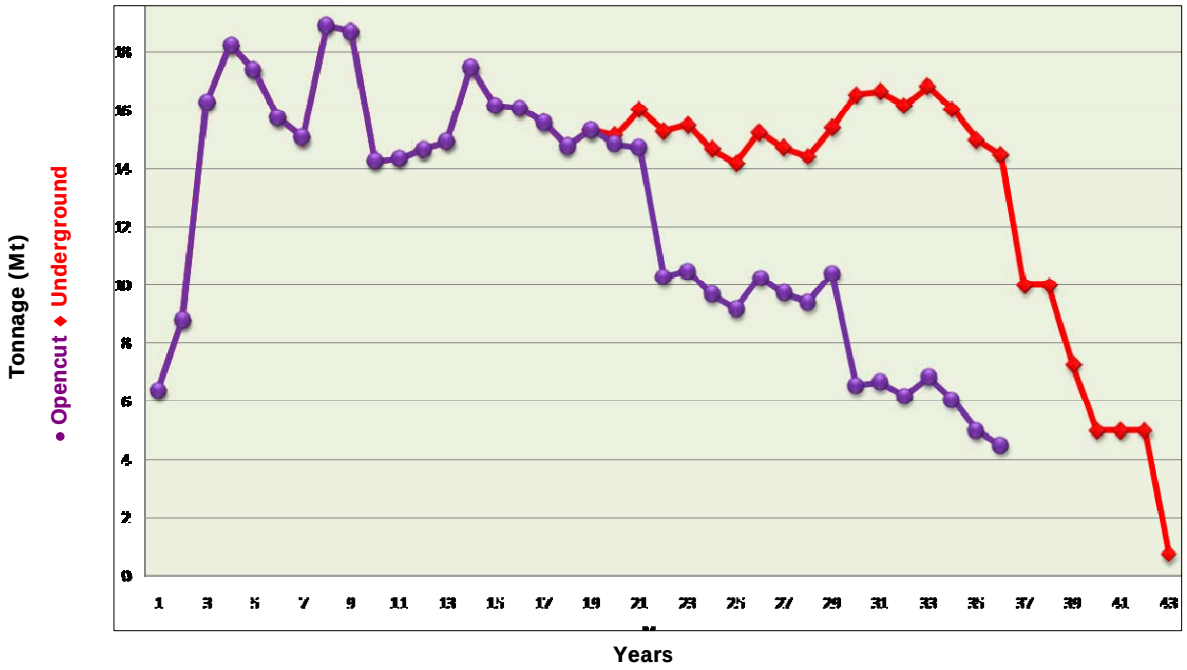
2.5 MINING ACTIVITIES

A high level concept study based around the existing exploration data indicates a potential mine life of 43 years with phased opencut and underground developments, as shown in **Table 2-2** and conceptual coal tonnages and timing as shown in **Figure 2-5** below.

Table 2-2 Estimated Opencut and Underground Mine Life

Phase	Mining Operations
Phase 1 – Proposed Years 1 – 19	Opencut mining only
Phase 2 – Proposed Years –19 - 36	Combination of opencut and underground mining
Phase 2 – Proposed Years 36 to end of mine life	Underground mining only

Figure 2-5 Conceptual Coal Tonnages and Timing



Open cut mining methods will be determined following further mine planning, but will involve truck and shovel, shovel and conveyor, and/or dragline options and is likely to involve a number of active pits. Underground mining is likely to be via punch longwall mining off the opencut highwalls and may include multiple longwalls.

2.5.1 Coal Handling and Processing Plant

A CHPP would be constructed on the Project site to process the coal from both the open cut and underground operations. Raw coal would be transported to one or more ROM stockpile facilities utilising haul trucks or an overland conveyor system, before being transferred to the CHPP.

As part of the coal processing, coal fines and reject material would be produced as by-products and transferred to appropriate containment facilities. The washed product coal would be conveyed and stockpiled for offsite transport via a product handling and train load-out facility.

Water from the CHPP will be recycled in order to minimise water usage.

2.5.2 Coal Tailings and Coarse Rejects

Various options are currently being investigated for tailings and coarse rejects management and include:

- developing tailings and/or coarse rejects storage cells within the waste rock emplacements;
- construction of purpose built tailings or co-disposal storage facilities; and/or
- utilising final voids.

These options will undergo initial assessment with the most appropriate option, or combination of options, assessed in detail as part of the EIS process.

The appropriate method of reject and tailings disposal will be determined in conjunction with the water resource study as part of the EIS assessment. Plant water consumption and water availability will be major considerations in the selection of the appropriate method of tailings disposal.

Both the Hancock and Waratah Projects have proposed mine mouth power stations and are exploring the suitability of the region for carbon geo-sequestration, however Hancock has recently indicated they would utilise the existing power grid. While not depending on either of these projects, if a mine mouth power station is developed, there is potential for tailings from the SGCP to be transported and utilised as an energy source by the power station, making it a positive resource rather then a waste product requiring disposal.

2.6 WATER SUPPLY

Approximately 3,000 ML per annum of raw water may be required for the mining operation, processing facility and supporting infrastructure, although the final design and process systems could reduce this volume significantly. Potable water will also be required onsite for personal use and consumption with options for potable water supply including: a pipeline from an offsite potable water treatment plant; the construction of an on site water treatment plant; or delivery of treated water to site via potable water trucks.

Raw water importation and usage on site will be minimised wherever possible. To this end, the Project will focus on:

- incorporating leading water management practice for process systems and infrastructure design;
- maximising recycling of process water;
- utilising onsite water supply options wherever possible; and
- potentially treating process and/or pit water to increase process makeup water.

It is currently proposed that the water requirements for the mine will be supplied from a combination of groundwater, collected internal site runoff, recycled and treated process water and an external raw water supply.

The amount of groundwater available onsite, aquifer recharge capacity, rainfall runoff and water treatment recovery volumes will be determined during future studies. The mine may begin with initial operations dependent entirely on ground water with raw water makeup via a pipeline from the Burdekin Dam or the proposed Connors River Dam.

2.7 POWER AND FUEL SUPPLY

Approximations based on similar mining operations indicate the power supply required for the site infrastructure including CHPP, and mining equipment will be in the order of 60 - 70 MVA per annum. There are currently two options for the supply of electricity for the SGCP including:

1. Extending the existing 275kV power grid from Lilyvale through the Powerlink and Ergon supply system to the Project site; or
2. The successful approval and development of one of the currently proposed mine mouth power stations in the region, with suitable third-party supply conditions being provided.

Any viable options for utilising renewable energy sources will be incorporated into infrastructure planning and construction. Additional information will be provided on the various power supply options once feasibility studies are completed.

Diesel fuel and possibly petrol will need to be supplied to the site for the operation of mine equipment. Some form of onsite fuel storage facility will be required. Further information on fuel volumes and storage requirements will be determined during the feasibility studies.

2.8 SERVICE ROADS AND HAUL ROADS

The main access to the site will be along the Capricorn Highway from Emerald to Alpha, which is a state controlled regional road. Any additional service roads will need to be constructed and connected with local Council controlled roads in the mining area.

All haul roads at the mine will be within the SGCP tenure and will not directly impact on land outside of these boundaries. Coal will be transported from the mining areas to, potentially, multiple ROM areas, with overland conveyors proposed to connect remote ROMs to the main CHPP. Haul roads will be designed to minimise environmental disturbance.

2.9 WORKFORCE AND ACCOMMODATION

The SGCP will provide approximately 750 permanent jobs, although numbers will vary depending on the final mine plan and selection of mining equipment. During the development/construction stage it is estimated a total of 1,5000 construction personnel will be required. In addition to the mine personnel, support personnel would be required for operating an accommodation camp and there would be periodic increases of maintenance contractors for shutdown work on the major plant and infrastructure.

Due to the relatively remote location of the proposed mine and its distance from an available workforce, a fly-in-fly-out (FIFO) roster is a possible scenario for the majority of employees, however options for development of housing in Alpha or nearby townships for part of the workforce will also be assessed.

For a FIFO operation, an accommodation village would be required. The sizing and location of the accommodation village would be determined, in conjunction with relevant local planning requirements, once mine planning is agreed for the Project. It is likely the village would be located in an area where there is minimal disturbance both to any surrounding landholders from the village, and to off duty employees at the village from mining operations.

The accommodation village provided for the permanent workforce would be designed and constructed to blend in with local environment, and include accommodation, full catering and appropriate recreational facilities. A separate, temporary construction camp may be built to accommodate the construction workforce.

2.10 PROJECT TIMEFRAME

The Proponent estimates the completion of feasibility studies and the EIS approval process will take approximately 24 months. Based on this timeframe, the target date for commencement of construction would be 2012, with the first shipment of coal proposed for 2014 - 2015. However, development timeframes are very much dependent on the completion and access to off-site rail and port infrastructure, as well as the availability of secure long-term electricity and water supplies.

3 RAIL ACCESS AND PORT ALLOCATION

As previously discussed, the infrastructure for transport of product coal to a port with suitable facilities and available allocation is not currently in place, although separate projects are in the planning and approval stages for the infrastructure that would be required for the SGCP.

The Proponent acknowledges the inherent uncertainty of this Project until both rail access and port allocation has been sourced.

3.1 RAIL ACCESS

Both Hancock's Alpha Coal Project and Waratah's Galilee Coal Project are proposing rail corridors and the construction of appropriate rail infrastructure to transport coal to an expanded Abbot Point Coal Terminal. Both of these projects have final Terms of Reference and are in the EIS process to obtain approval for their proposals. For the purpose of this IAS, the Proponent for the SGCP is progressing on the assumption that at least one of these rail proposals is likely to be approved and will have third party access and capacity to transport coal from the SGCP to the coal export port.

Specifics pertaining to these rail infrastructure proposals, including community consultation and environmental impacts and mitigation measures, will be explored in the Alpha Coal Project and Galilee Coal Project EISs and are not considered as part of the SGCP, with the exception of the infrastructure corridor that has been identified to allow a rail connection between the SGCP and either the Waratah or Hancock proposed rail infrastructure, as shown in **Figure 2-2**.

3.2 PORT ALLOCATION

Situated about 25 kilometres north of Bowen, the Port of Abbot Point (Abbot Point) is Australia's most northerly coal port. The Abbot Point Coal Terminal at the port comprises a rail in-loading facility, coal handling and stockpile areas, and a single trestle jetty and conveyor connected to a berth and shiploader, located 2.75 km off-shore.

Abbot Point is currently undergoing expansion and development. The port is planning to expand to meet growing coal export demand. North Queensland Bulk Ports Corporation (NQBP), who operate Abbot Point, is investigating the proposed expansion of the Abbot Point Coal Terminal to 110 million tonnes per annum, known as the X110 project. NQBP is currently undertaking a Voluntary Environmental Assessment (VEA) of the project to assess the potential impacts.

Major coal project development in the Galilee Basin is dependent upon having an economically viable port allocation and ship loading facilities available for export of the resource after it is mined. The proposed expansion at Abbot Point, if approved and constructed, will assist in facilitating the development of the Galilee Basin.

4 EXISTING ENVIRONMENT AND POTENTIAL IMPACTS

The currently identified environmental and social values, and associated potential impacts from the SGCP are presented in this section, however further studies are still required in some areas. Further detailed reports and assessments will be provided, where required, in the EIS.

4.1 REGIONAL CLIMATE

The Alpha region has a semi-arid to arid climate with summers being very hot and winters dry and warm.

Data from the nearest Bureau of Meteorology weather station, located approximately 100 km west of the SGCP at Blackall Township, indicates that the SGCP site may experience rainfall all year round, however it is highly seasonal, with the majority of rainfall occurring between December and March and the least falling between July and September. Average rainfall varies between 400 mm and 1,000 mm. The mean annual rainfall recorded at the Blackall Township station is 527 mm, based on data collected from 1870 to present. Most of the region experiences more than 2,800 mm of evaporation per year, with extremes of up to 4000 mm in drought years.

Temperatures range from -2° to 49°C. Mean temperatures range from 20.1 - 36.5°C in summer and 11 - 25.4°C in winter. The coolest temperatures occur in July with average minimum temperature of 6.9°C. The highest temperatures were recorded in December and January with average maximum temperature of 36°C.

4.2 TOPOGRAPHY

The proposed SGCP is located on a gently undulating landscape with large sections of the proposed mine area cleared of vegetation for the purposes of low intensity cattle grazing. The site is traversed by Alpha Creek and a number of minor drainage systems.

The major topographical features in the region are the Drummond Range approximately 60 km to the east of the SGCP and the Great Dividing Range approximately 10 km to the west of the SGCP.

4.3 GEOLOGY AND GEOCHEMISTRY

The Galilee Basin is a Late Carboniferous to Mid-Triassic sedimentary basin, extending over 247,000 km^2 in central western Queensland as discussed in **Section 2.3.1** and shown in **Figure 2-3**.

Coal deposits within the SGCP lie within the eastern, shallowing flank of the north-south trending Galilee Basin. Bituminous coal seams occur within both the Bandanna Formation and Colinlea Sandstone, subcropping to the east and dipping gently to the west (0.5° – 2.2°). The Bandanna Formation contains up to 4 coal seams within the area while the Colinlea Sandstone contains up to 5 coal seams, two of which are the D1 and D2 seams that have comprised the principle target for exploration drilling to date.

The overlying Triassic Rewan Formation has an average thickness of 30 - 40 m of Tertiary unconsolidated sands and clays within the exploration area. Weathered overlying strata averages 46 m in depth.

A study into the geochemical characteristics of the mine workings, roof and floor strata and likely coal rejects characteristics, including the potential for acid rock drainage (ARD) generation, will be undertaken as part of the EIS process.

4.4 SOILS

There are a wide array of soil types in the Galilee Basin due to its complex geology and geomorphology. The Galilee rangelands soils include shallow loam, sands and duplex soils towards the north, and red and yellow earth deep alluvium soils associated with the Belyando River flood plain towards the south. There are also extensive occurrences of cracking and non-cracking clays.

The soils of the SGCP tenements typically consist of loams interspersed with pockets of cracking clays, sandy duplex and Gilgai clay soils.

4.4.1 Potential Impacts and Mitigation Measures

The Proponent will perform the appropriate assessment to determine the type, extent and characteristics of the soils within the SGCP area. In general terms, soil management as part of the SGCP would involve the following:

- identification of suitable topsoil resources via topsoil profiling and characterisation assessment, prior to stripping and stockpiling as per standard industry and internal procedures;
- erosion protection of disturbed areas, topsoil stockpiles and waste rock emplacements (including dust management). This would be achieved by sediment control traps, drainage lines and progressive rehabilitation; and
- sedimentation control through the surface water management system.

By following industry standard management techniques, the Proponent aims to recover and store sufficient volumes of topsoil to successfully rehabilitate lands disturbed by mining activities.

4.5 LAND USE

Land within the SGCP area is predominantly cleared farmland used for low intensity cattle grazing. The majority of land in the area is relatively undisturbed by development.

4.5.1 Potential Impacts and Mitigation Measures

The current land use of low intensity cattle grazing will not be possible during mining operations. For the duration of the Project operational mining areas will be cleared of cattle. Mine rehabilitation will be undertaken progressively through the mine life and where possible will seek to reinstate a land use mosaic of low intensity cattle grazing and native vegetation. Details of final land use will be discussed in the EIS with commitments included in the EMP.

4.6 TERRESTRIAL ECOLOGY

Initial terrestrial flora and fauna studies were undertaken over the Project area by Matrixplus Consulting in 2009 with the results summarised below.

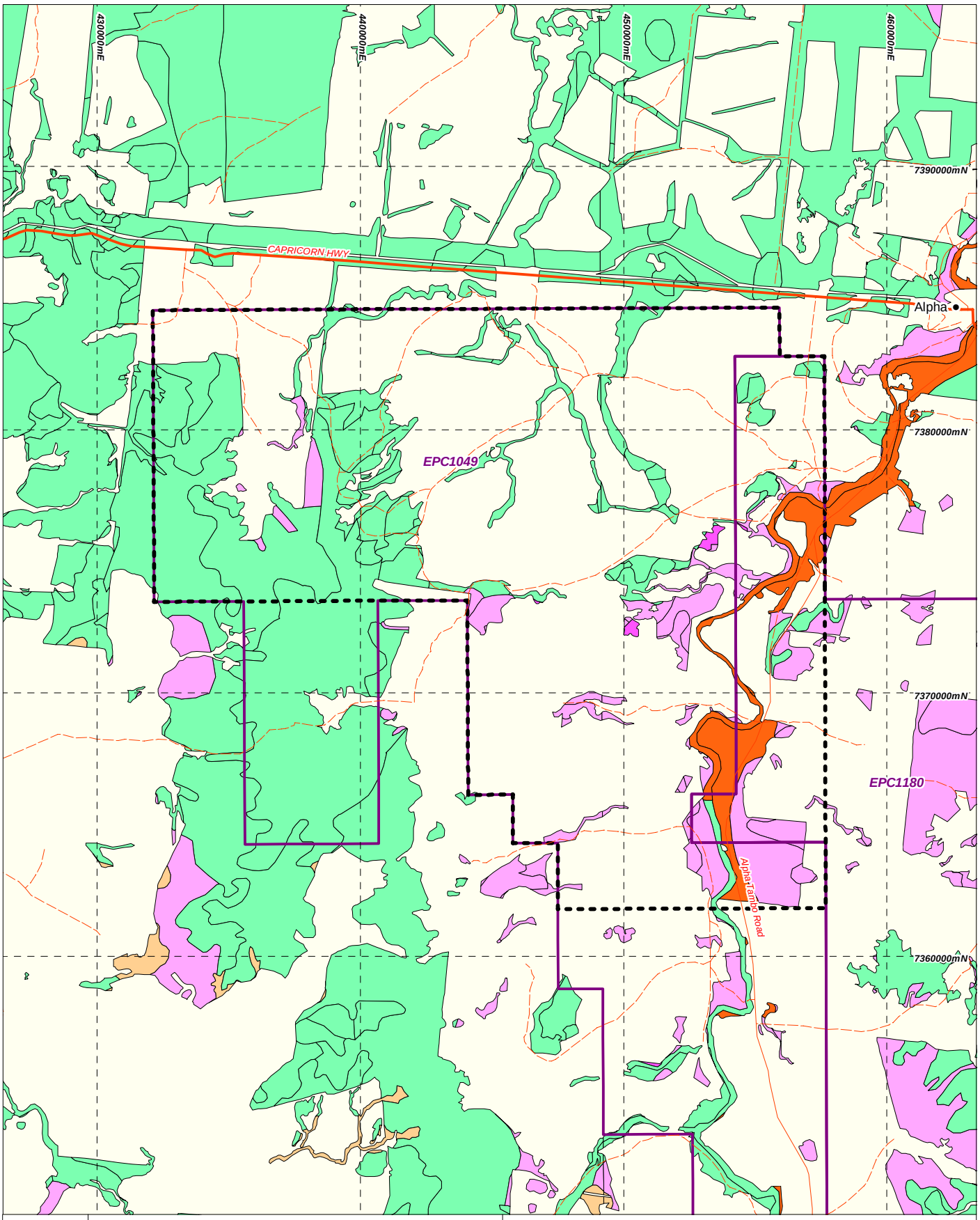
4.6.1 Vegetation Communities

Current Regional Ecosystem (RE) mapping for the project area (**Figure 4-1**) delineates approximately 50% of the project area is remnant vegetation, containing 29 distinct vegetation communities.

On the basis of field observations a revised, verified vegetation map was prepared for the Project site and is provided in **Figure 4-2**. A summary of the REs present based on field verified data is provided in **Table 4-1.**

Table 4-1 Presence of Threatened Ecological Communities within the project area and number of regional ecosystems within the project area

Ecological Community / Regional Ecosystem	Number or presence / absence of communities
Threatened Ecological Communities (Environmental Protection and Biodiversity Conservation Act)	
Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin	Absent
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Present
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Absent
Regional Ecosystems (Vegetation Management Act)	
Endangered	2
Of concern	2
Not of Concern	20
Total	24
DERM Biodiversity Status Regional Ecosystems	
Endangered	2



LEGEND

- Project EPC tenement
- Ecology study area
- Principal road
- Road (sealed)
- Road (unsealed)

VM Act Status

- Endangered (dominant)
- Endangered (sub-dominant)
- Of Concern (dominant)
- Of Concern (sub-dominant)
- Not Of Concern

matrixplus

29/04/2010

Data Source:
Tenement - EEDI. Topography (250k) - Geoscience Australia.
RE Mapping (2003 ver6) - DERM

Alpha Coal Pty Ltd

South Galilee Coal Project

Certified RE mapping

0 4 8

Kilometres

Scale: 1:200,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 4-1

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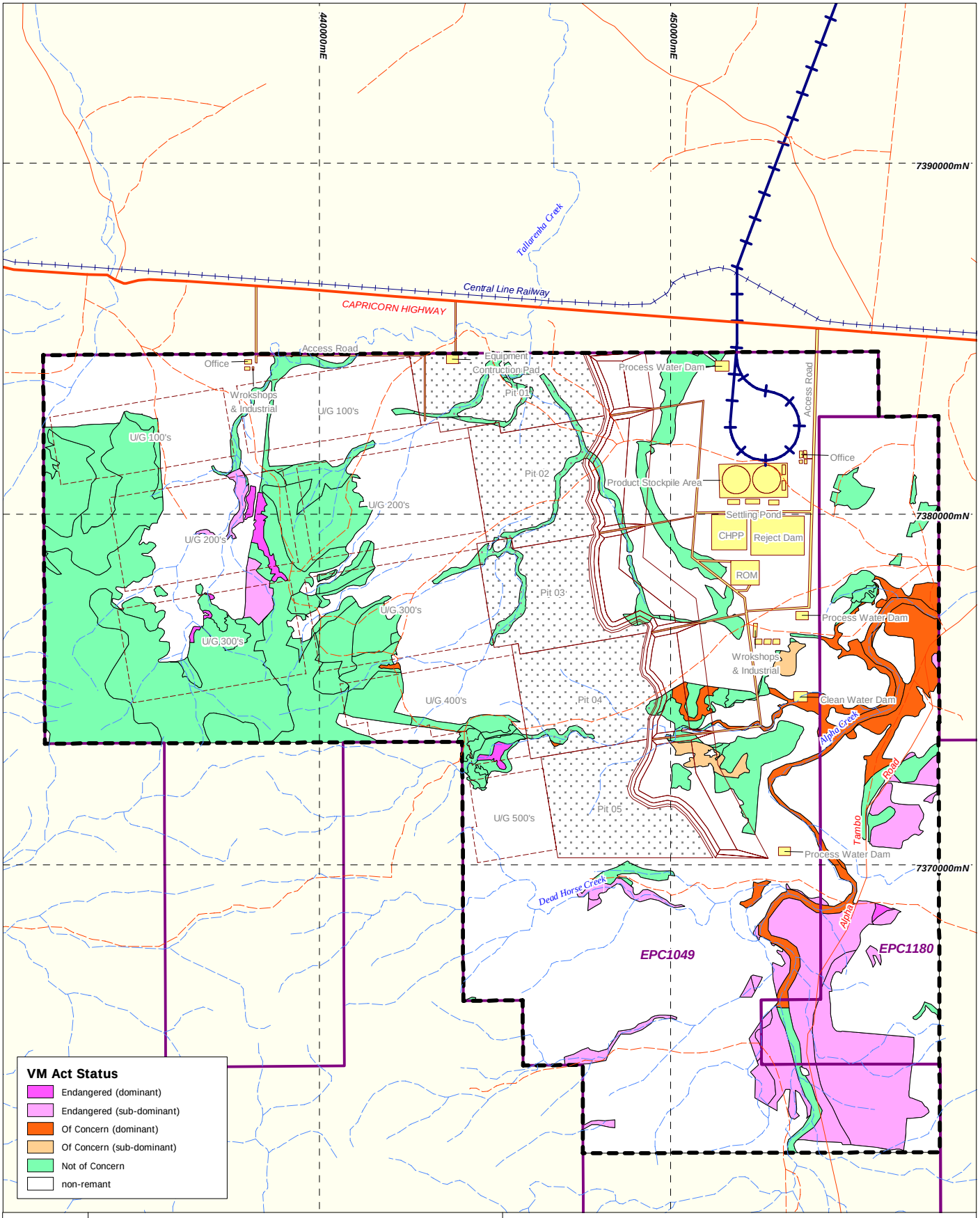

LEGEND

- Principal road
- Road (sealed)
- Road (unsealed)
- Railway
- Watercourse
- Ecology study area
- Project EPC tenement
- Proposed pit
- Proposed underground
- Proposed dump
- Proposed infrastructure
- Proposed rail loop

matrixplus

02/03/2010

Data Source:
Infrastructure - Minserve. Tenement - EEDI. Topography (250k) - Geoscience Australia.

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Alpha Coal Pty Ltd

South Galilee Coal Project

Field verified regional ecosystem mapping

0 3 6

Kilometres

Scale: 1:150,000 (A4)

Datum: GDA94
Projection: MGA55

FIGURE 4-2

4.6.2 Rare or Threatened Flora and Fauna Species

A review of databases has identified flora and fauna species of conservation significance that potentially occur within the project area, as listed under the EPBC and Nature Conservation Acts. **Table 4-2** identifies six flora species and nine fauna species of conservation significance as potentially occurring within the project area.

Table 4-2 Threatened flora and fauna species that may occur within the project area

Threatened Species	Total project area
Flora	
Listed under EPBC Act only	6
Listed under NC Act only	2
Listed under both EPBC & NC Acts	0
Total	8
Fauna	
Listed under EPBC Act only	2
Listed under both EPBC and NC Acts	7
Total	9

4.6.3 Flora and Fauna Species of Other Conservation Significance

Flora and fauna species of other conservation significance include all species listed as Migratory under the EPBC Act. An EPBC Protected Matters Search identified eleven species of birds which may potentially occur within the project area as shown in **Table 4-3.**

Table 4-3 Migratory bird species likely to occur or may occur within the project area

Threatened Species	EPC 1049	EPC1180
Migratory terrestrial species	3	3
Migratory wetland species	5	5
Migratory marine species	3	3
Total	**11**	**11**

4.6.4 Potential Impacts and Mitigation Measures

Potential impacts on vegetation communities and threatened flora and fauna species will be associated with the mining and related activates planned in the project area.

The clearing of vegetation is one of the most significant impacts of mining on biodiversity through habitat loss and landscape fragmentation. This has potential implications for flora populations through alterations in dispersal patterns and for fauna through disruption of wildlife corridors and ecological processes. These impacts are particularly significant in relation to riparian vegetation along creek lines.

Fauna species may be affected through direct loss or injury. Clearing of habitat vegetation may result in a reduction of core habitat values of these areas. Fragmentation and associated edge effects can also provide opportunities for the introduction and colonisation of declared pest species during construction and operational phases.

Areas of vegetation clearing necessary for mining operations will be minimised where possible, and undertaken in accordance with best practice to minimise potential impacts.

Rehabilitation of native ecosystems is generally required to mitigate landscape impacts and biodiversity loss. Rehabilitation programs will be developed and implemented to restore native vegetation as necessary.

Often there is a lack of pre-mine baseline data on biodiversity to determine the impact of the mining activities. Flora and fauna management plans will be developed as part of the EIS process to minimise impacts to communities and species by the project.

4.7 SURFACE WATER

The main creek line within the Project area is Alpha Creek, with a number of associated smaller creeks and drainages. These creeks are tributaries of the Belyando River which flows in a northerly direction until it joins the Suttor River and eventually into the Burdekin River. The Belyando Catchment is approximately 35,411 km^2 and is one of the main sub catchments in the Burdekin Basin.

Current water quality conditions within the catchment are influenced by grazing activities, with relatively minimal industrial and urban-based impacts.

4.7.1 Potential Impacts and Mitigation Measures

The SGCP has the potential to impact on surface water quality and hydrology. During construction and operational phases of the Project, potential impacts on surface water quality include:

- sediment from disturbed soils entering waterways;
- uncontrolled release of water impacted by mining operations;
- contamination of clean water runoff and drainage from mining operations;
- changes to surface water flows from subsidence;
- hydrocarbon and other small scale spillages from storage areas and vehicles; and
- release of sewage and other untreated waste water from construction camps, the mine site operation and accommodation facilities.

Studies on surface water quality and hydrology will be undertaken as part of the EIS process. These studies will consider the impact of flooding on the various project components, particularly in relation to any waterway crossings or stream diversions. Further investigations will be undertaken during the EIS to determine potential releases and impacts on water quality in receiving waters. Project activities will be designed to segregate clean water from mine impacted water, minimise contamination of clean water and maximise the recycling of water for process use.

4.8 GROUNDWATER

The potential mining area is situated in the Highlands Groundwater Management Unit, close to but outside the mapped extents of the Great Artesian Basin (GAB). Little is currently known about the groundwater resources in this area. Current mining exploration works have encountered minimal groundwater flows, however further studies and a detailed groundwater assessment are required.

4.8.1 Potential Impacts and Mitigation Measures

Groundwater impacts may result as a side effect of mining or through specific use of groundwater as a resource. Any extraction of groundwater or any infiltration of contaminants to existing aquifers has the potential to impact on the surrounding hydrogeological regime. Examples of activities which could lead to impacts are given in **Table 4-4** below.

Table 4-4 Examples of potential groundwater impacts

Activity	Potential Impacts
Mining	• The proposed SGCP may intersect existing aquifers during mining operations which could lead to groundwater inflows into the underground and/or open-cut coal mines. • A degree of aquifer dewatering is likely to be required by the mining operation to allow for safe mining operations. • Storage of process water in mine pits and water storages could infiltrate and potentially contaminate groundwater resources.
Resource Usage	• SGCP is assessing the option of utilising groundwater resources for mine water supply. Impacts associated with groundwater usage could include localised drawdown of groundwater levels.

A detailed groundwater assessment will be undertaken as part of the EIS process to establish baseline conditions and existing utilisation of the groundwater resource, undertake modelling of the existing groundwater regime and identify any potential impacts relating to both opencut and underground mining. Appropriate mitigation and management procedures will then be developed to minimise or avoid identified potential impacts.

4.9 AIR QUALITY

There is no existing air quality model or data readily available for the Central West region in general or the Project area in specific. The existing environment is typical of semi-arid to arid rural areas, with large, isolated properties supporting low intensity grazing.

4.9.1 Potential Impacts and Mitigation Measures

Construction works will require considerable earthworks to prepare the site for infrastructure, along with increased road traffic volumes resulting from transportation of materials to site. These works have the potential for dust and air quality impacts on sensitive receptors.

During the operational stage of the SGCP there is potential for a reduction in air quality due to dust generation and emissions from mining activities, stockpiling overburden, raw and treated coal, coal transport on site, coal processing and rail loading activities.

Dust generation will be addressed in the EIS and minimised during construction and operational phases using appropriate dust suppression and control techniques.

4.9.2 Greenhouse Emissions

An inventory of projected annual emissions for each relevant greenhouse gas will be included in the EIS, together with calculations on predicted total emissions.

The EIS will detail proposed measures to eliminate or minimise greenhouse gas actual and equivalent emissions resulting from the project.

4.10 NOISE AND VIBRATION

The existing noise environment is typical of rural areas. Aside from the township of Alpha itself, the surrounding land use is of predominantly large, isolated agricultural properties undertaking low intensity cattle grazing.

There is a rail line with a passenger service 'The Spirit of the Outback' that passes close to the township of Alpha a total of four times per week, twice going west to Longreach and twice returning to the east through Emerald and Rockhampton on route to Brisbane.

4.10.1 Potential Impacts and Mitigation Measures

During construction of the mine there will be an increase in heavy vehicle movements to and from the mine site due to transport of infrastructure materials and heavy earth moving equipment. Other construction activities such as clearing, blasting and excavation works have potential to temporarily increase ambient noise levels.

Once the mine is operational there will be increases in noise levels from a number of sources including the mine itself and associated activities:

- coal haulage trucks;
- CHPP operation;
- conveyors and associated conveyor drives;
- ventilation fans for underground workings;
- railway coal load out facility and rail loop;
- additional trains along the yet to be approved and constructed railway alignment;
- additional vehicle movements along new and existing roadways; and
- blasting.

The potential for vibration impacts during both construction and operational phases of the project are anticipated to be minimal. Possible impacts during construction from limited blasting, if and when required, will be managed by selection of appropriate blasting techniques, timing and design. The potential noise and vibration impacts of the development will be modelled in the EIS and discussed with reference to relevant Queensland legislation, DERM guidelines and Australian standards.

4.11 SUBSIDENCE

Substantial coal resources are proposed to be mined by longwall underground mining techniques once opencut mining has progressed sufficiently. Access to these seams may be via a drift through a final highwall of the opencut or through a separate drift/shaft access.

Detailed design of the underground mine is ongoing and a number of options in relation to access points, roadways, ventilation shafts and drift locations are being assessed.

The current conceptual projected extent of the longwall operation is presented in **Figure 2-1**.

Based on current conceptual modelling the underground area would have a mine life of approximately 23 years. Typical depths to the underground operations are between 120 m and 300 m.

4.11.1 Potential Impacts and Mitigation Measures

Studies will be undertaken to assess the potential impact of subsidence on the topography, flora and land suitability criteria, as well as impacts from underground operations which may result in alteration of the surface and groundwater hydrological regimes. The subsidence modelling will be incorporated into the groundwater and flood impact assessment studies and final land form rehabilitation planning.

4.12 VISUAL AMENITY

An assessment of the visual quality and character of the land surrounding the Project area would be undertaken as part of the EIS. The region surrounding the SGCP is agricultural in nature, with the nearby township of Alpha having a population of 360. The surrounding landscape is largely flat or gently undulating, semi-arid bushland which has largely been cleared for low intensity grazing purposes. The major feature of visual interest would be the Drummond Ranges approximately 60 km to the east and the Great Dividing Range approximately 20 km to the west of the SGCP.

4.12.1 Potential Impacts and Mitigation Measures

Prominent infrastructure to be constructed at the SGCP may include overland conveyors, a ROM facility, CHPP, rejects storage facilities, access and haul roads, a water pipeline, water storage dam's, site administration and maintenance buildings and an accommodation village. This infrastructure has the potential to reduce the visual amenity of the immediate surrounds. However the largest impact to visual amenity is likely to be overburden stockpiles. Given the gently undulating terrain in the immediate vicinity, these stockpiles are likely to be visible and impact on the existing visual amenity.

Visual impacts will be minimised wherever possible through landscaping and appropriate design. Given the proximity of the infrastructure to the township of Alpha, a lighting assessment may be required to ascertain the potential impacts and appropriate mitigation strategies as part of the EIS process.

The potential cumulative impact of the SGCP on the existing scenic values of the landscape will be assessed by considering the visual quality of the local landscape and identifying the potential visibility of the operation from the surrounding area. A visual assessment study will be undertaken to identify the visual impact of the SGCP on the surrounding area and nearest potential viewpoints.

4.13 CULTURAL HERITAGE

4.13.1 Non-Indigenous Heritage

A search of the DEWHA Australian Heritage register and a search of the DERM Queensland Heritage Register did not list any known European cultural heritage sites of significance within the project area. A field study will be undertaken as part of the EIS process to identify and manage any significant cultural heritage items within the proposed Project area.

4.13.2 Aboriginal Heritage

Indigenous language and tribal groups who have previously claimed an interest in the proposed project area are the Bidjara 3, Wangan and Jagalingou People as shown in **Table 4-5**.

Table 4-5 Active Native Title Claim(s)

TENEMENT ACTIVE NATIVE TITLE CLAIM(S)	TENEMENT ACTIVE NATIVE TITLE CLAIM(S)
EPC 1049	1. Bidjara 3; Claim No.: QC97/49 2. Wangan & Jagalingou People; Claim No.: QC04/6 3. Wangan/Jagalingou People; Claim No.: QC05/4
EPC 1180	1. Bidjara 3; Claim No.: QC97/49 2. Wangan & Jagalingou People; Claim No.: QC04/6 3. Wangan/Jagalingou People; Claim No.: QC05/4

4.13.3 Potential Impacts and Mitigation Measures

Construction and operational mining activities have the potential to disturb or damage significant heritage sites or artefacts. Cultural heritage studies will be conducted as part of the EIS process to confirm Traditional Owners and identify indigenous heritage values relating to the project area.

In consultation with Traditional Owners, a Cultural Heritage Management Plan (CHMP) will be negotiated as part of the approvals process.

4.14 SOCIO-ECONOMIC CONDITIONS

It is recognised that the project is to be located in a relatively sparsely populated area of Queensland. The nearby township of Alpha has a population of 360 people and relatively limited facilities. The nearest regional centres are Barcaldine approximately 130 km to the west and Emerald approximately 160 km to the east, with populations of around 2,000 and 10,000 people respectively. The construction, establishment and operation of a new mine in the area has the capacity to build the economy of the region and provide job opportunities and infrastructure.

4.14.1 Potential Impacts and Mitigation Measures

The SGCP would benefit local and regional areas with increased security of employment and the ongoing requirement for services and support. Elements of the SGCP that may have an impact on the socio-economic climate of the region and state would include water supply, electricity supply, labour supply, infrastructure, accommodation, rail and road traffic.

The Proponent will assess the social and economic impacts of the SGCP as part of the EIS process.

4.15 TRAFFIC AND TRANSPORT

The major roads likely to be utilised to transport materials to the SGCP site are the Bruce Highway, Capricorn Highway, Gregory Development Road, the Capella-Alpha Road, the Fitzroy Development Road and the Alpha-Tambo Road. In addition, a number of lesser Regional Shire Council roads may be used to gain access to the project site.

4.15.1 Potential Impacts and Mitigation Measures

As part of the EIS process a traffic/transport impact assessment will be undertaken in accordance with the Department of Main Roads' *Guidelines for the Assessment of Road Impacts of Development Proposals*. This assessment will include a review of the SGCP during both construction and operational stages for additional impacts on the existing local and State-controlled road network, workforce access to the site and the development of appropriate mitigation measures.

4.16 WASTE MANAGEMENT

Waste management for the Project will consist of both general waste and mine specific waste management procedures.

The options for mine process waste management are discussed above in **Section 2.5.2**. The assessment of these options is part of ongoing mine planning and environmental assessment work.

General wastes would be managed appropriately either as recyclable materials, general waste to landfill or as regulated wastes for disposal as appropriate.

4.16.1 Potential Impacts and Mitigation Measures

The management of wastes generated by the project will be addressed in the project Environmental Management Plan, which will be developed during the EIS process. The overlying principals of the waste management system will follow DERM's 'Hierarchy of waste'.

4.17 REHABILITATION AND DECOMMISSIONING

Rehabilitation and decommissioning activities will be part of the overall rehabilitation strategy for the SGCP. Strategies used to ensure closure criteria would be met include:

- landform designs for waste rock emplacements, tailings storage facility and final voids;
- revegetation programs and monitoring;
- progressive rehabilitation where possible;
- review of contaminated land registers; and
- annual review of disturbance footprint and liability.

The Environmental Management Plan prepared for the Project will incorporate the relevant findings and strategies proposed in the EIS.

5 APPROVALS PROCESS

5.1 COMMONWEALTH APPROVALS LEGISLATION

5.1.1 Environment Protection and Biodiversity Conservation Act 1999

Under the assessment and approval provisions of the EPBC Act, actions that have, or have the potential to significantly impact on a Matter of National Environmental Significance (MNES), are referred to as 'controlled actions' and require approval under the Act.

A referral will be submitted to the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) to determine whether the Project is classed as a 'controlled action' and what approval is required under the Act.

If the Commonwealth Minister for Environment determines the Project would constitute a 'controlled action' it is usual for the existing bilateral agreement to take effect, whereby the Commonwealth Minister has accredited the Queensland state EIS process. This accreditation deems the Queensland impact assessment procedure acceptable for evaluation of potential project impacts and remedial measures under both jurisdictions. As part of the bilateral agreement, DEWHA comment and approval from the Commonwealth Minister for Environment will be sought by the Department of Infrastructure and Planning (DIP), prior to finalisation of the approval process.

5.2 STATE APPROVALS LEGISLATION

Given the nature, scale and location of the proposed coal mine, the Proponent voluntarily proposes to undertake an Environmental Impact Statement. There are currently two EIS processes possible in Queensland, one regulated by DERM under the EPA, and the other regulated by DIP under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The Proponent believes the Project qualifies for 'significant project' status under the SDPWO Act and is applying to the DIP for the Co-ordinator General's (CG) declaration of the Project as significant. This decision will determine what regulatory path the EIS approval process will take, but has no discernible difference to the rigour of the EIS process or the legislated public consultation requirements.

5.2.1 State Development and Public Works Organisation Act 1971

The Proponent, in considering the scale of the project, is seeking declaration of the SGCP as a 'Significant Project' under the SDPWO Act on the basis of the level of investment, potential effect on infrastructure and the environment as well as employment opportunities. The SDPWO Act establishes the framework for environmental assessment of major projects in Queensland, identifying the EIS process and its relationship with other State legislation.

5.2.2 Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) provides a licensing and approval regime for a range of Environmentally Relevant Activities (ERAs). A range of ERAs will be carried out during the construction and operation of the proposed plant. Approval for these ERAs will take the form of an Environmental Authority granted under the EP Act. A list of potential ERA's for the SGCP are listed in **Table 5-1**.

Table 5-1 Environmentally Relevant Activities Requiring Authorisation

ERA No.	ERA Description
ERA 6 – Asphalt manufacturing	Asphalt manufacturing (the relevant activity) consists of manufacturing asphalt.
ERA 8 - Chemical Storage	(1) Chemical storage (the relevant activity) consists of storing— (a) 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 in containers of at least 10m3; or (b) 50t or more of chemicals of dangerous goods class 6, division 6.1 in containers capable of holding at least 900kg of the chemicals; or (c) 10m3 or more of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3; or (d) the following quantities of other chemicals in containers of at least 10m3— (i) 200t or more, if they are solids or gases; (ii) 200m3 or more, if they are liquids.
ERA 15 – Fuel Burning	Fuel burning (the relevant activity) consists of using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour.
ERA 17 - Abrasive Blasting	(1) Abrasive blasting (the relevant activity) consists of cleaning equipment or structures on a commercial basis using a stream of abrasives in either a wet or dry pressure stream. (2) The relevant activity includes— (a) spraying a coating on equipment or a structure that has been subject to abrasive blasting; and (b) carrying out the activity at any site.
ERA 18 - Boiler Making or Engineering	(1) Boilermaking or engineering (the relevant activity) consists of boilermaking, assembling, building or manufacturing a total of 200t or more of metal product in a year.
ERA 21 – Motor vehicle workshop	Motor vehicle workshop operation (the relevant activity) consists of operating a workshop on a commercial basis or in the course of carrying on a commercial enterprise involving any of the following relating to motor vehicles— (a) maintaining mechanical components, engine cooling radiators or body panels; (b) spray-painting body panels; (c) detailing or washing. (2) The relevant activity includes carrying on a commercial or non-commercial enterprise by or for a State or local government entity.
ERA 31 – Mineral processing	(1) Mineral processing (the relevant activity) consists of processing, in a year, a total of 1000t or more of coke or mineral products.
ERA 38 – Surface coating	(1) Surface coating (the relevant activity) consists of using, in a year, 1t or more of surface coating materials for— (a) anodising, electroplating, enamelling or galvanizing; or (b) coating or painting or powder coating.
ERA 43 – Concrete batching	(1) Concrete batching consists of producing 200t or more of concrete or concrete products in a year, by mixing cement with sand, rock, aggregate or other similar materials.
ERA 56 - Regulated waste storage	(1) Regulated waste storage (the relevant activity) consists of operating a facility for receiving and storing regulated waste for more than 24 hours.

5.3 SUMMARY OF RELEVANT COMMONWEALTH AND STATE LEGISLATION

Table 5-2 provides a summary of the above legislation and other Commonwealth and State legislation that may be relevant during the approval process. Legislation relevant to the construction and operation of the Project will be discussed in the appropriate section of the EIS.

Table 5-2 Summary of relevant Commonwealth and State legislation

Commonwealth Legislation	Department	Activity / Trigger	Requirement
Environment Protection and Biodiversity Conservation Act 1999	Department of the Environment, Water, Heritage and the Arts (DEWHA)	Submission of a referral for activities that have the potential to impact on matters of national environmental significance.	Referral to be made for DEWHA determination of 'controlled action' status. Potential impacts on matters of NES must be addressed in the EIS.
Native Title Act 1992	The Attorney-General's Department and Minister for Families, Housing, Community Services and Indigenous Affairs	Activities on lands where Native Title has not been extinguished.	Further investigations need to be undertaken to determine the status of Native Title claims for the Project area. Utilise the register of approved native title claimant groups for the purpose of the CHMP.
Energy Efficiency Opportunities Act 2006	Department of Resources, Energy and Tourism (DRET)	Assess energy reduction opportunities, minimise energy use and publicly report.	No action required until Project approvals have been received, however relevant to consider these requirements during early mine planning.
State Legislation	**Department**	**Activity / Trigger**	**Requirement**
Environmental Protection Act 1994	Department of Environment and Resource Management (DERM)	Duty of care to prevent or minimise environmental harm and provides a licensing and approval regime for a range of Environmentally Relevant Activities (ERAs).	EIS is the development approval requirement to meet environmental duty of care. An Environment Authority will be required once development approval is received for construction and operation.
Mineral Resources Act 1989	Department of Employment, Economic Development and Innovation (DEEDI)	Change to mining activities on mining tenure that does not allow that activity.	Application for change of EPC's to Mining Leases.
Aboriginal Cultural Heritage Act 2003	Department of Environment and Resource Management (DERM)	Duty of care to take all reasonable and practicable measures not to harm Aboriginal cultural heritage.	Approved CHMP required.
Nature Conservation Act 1992	Department of Environment and Resource Management (DERM)	Interference with species listed under the *Nature Conservation (Wildlife) Regulation 1994.*	A permit is required for any disturbance or interference with species protected under the Act.
Queensland Heritage Act 1992	Queensland Heritage Council	Impacts to Heritage listed sites.	There are no known Heritage listed sites within the proposed Project area.
Coal Mining Safety and Health Act 1999	Department of Mines and Energy (previously DNRMW)	Safety and Health requirements for mining operations.	Establishing and maintaining health and safety systems pursuant to obligations under the Act.
Vegetation Management Act 1999	Department of Environment and Resource Management (DERM)	Vegetation clearing.	N/A due to exemptions for mining activities. Any clearing of remnant vegetation may trigger definitions required for offsetting vegetation impacts.
Water Act 2000	Department of Environment and Resource Management (DERM)	Taking or interfering with relevant water, dams and licencing of bores.	Any relevant dams, monitoring bores, creek diversion and/or creek crossing would need to be designed and approved in accordance with the Water Act 2000.

The SGCP will also require a Mining Lease (ML) under the *Mineral Resources Act 1989* (MRA) to secure tenure for the proposed mining and associated activities. To obtain the ML, an Environmental Authority (EA) for a non-standard mining activity will be required under the *Environmental Protection Act 1994* (EP Act). The conditions of the EA will be negotiated with DERM following the EIS approval process.

6 HAZARD AND RISK

6.1 HAZARD, RISK AND HEALTH AND SAFETY ISSUES

At various phases of the Project, formal risk assessments will be conducted to identify hazards and risks associated with the Project and ensure appropriate control methods are implemented to effectively manage those risks. All risk assessment processes will follow the methodology outlined in AS/NZS 4360: Risk Assessment.

AS/NZS 4360 has already been applied to qualitatively rank the risks and opportunities associated with the SGCP and its mining activities at an initial and high level. The following table presents the results of the risk analysis, with the definitions for High, Medium and Low risk (H, M, L) as detailed in AS/NZS 4360.

Based on the information currently available, a summary of the risks for the SGCP are provided in **Table 6-1** below.

Table 6-1 Risk Summary

Aspect	Issues	Risk Level
Topography	The Project topography consists of low relief gently undulating slopes drained by tributaries of the Belyando River. There are no extreme changes in topography or any topographic issues likely to cause a problem for the Project.	L
Geology	Exploratory drilling undertaken at the Project to date verifies results from other programs in the Galilee Basin, showing a significant coal resource with seam thickness and at depths ideal for opencut and underground mining. Further drilling will be undertaken to further refine the resource knowledge and provide specific details for mine planning, however the resource and geology for the Project is extremely promising.	L
Soils	Soils are not a constraint to future mining. Appropriate sediment and erosion control will be required during the exploration phase for any water extracted from bores, and for any construction and operation works. Appropriate soil and land use assessments will be undertaken during the EIS process.	L
Land Use	Land use of the Project area is predominantly low intensity cattle grazing, however under relevant State planning policies, these lands can be used for other activities that have a community benefit (e.g. employment). Compensation to landholders will need to be negotiated.	L
Subsidence	The extent of subsidence depends on many geological and mining factors which will be assessed as part of the EIS process. The assessment of subsidence will identify any impacts on the topography, surface waters, vegetation, soils, land use, infrastructure and aquifers. While the extent and impact of subsidence is currently unknown, known management processes for mitigation of subsidence impacts are well established and will be implemented as required. Details of impacts and mitigation measures will be including in the EIS.	M
Ecology	The Project contains mapped areas of Brigalow, Bluegrass and Semi-evergreen vine thicket, which have conservation status under State and Commonwealth legislation. The Endangered Regional Ecosystem (ERE) polygons may pose a constraint to the mine layout and associated infrastructure. Where impacts on the ERE are unavoidable, compensatory habitat may be required. There are also a number of protected individual species that may utilise the site. These typically occur in associated with vegetation communities. These will be assessed during the EIS process and appropriate mitigation measures will be provided as necessary. A Commonwealth referral under the EPBC Act will be undertaken prior to commencement of the formal EIS process.	M
Social and Community Consultation	Proximity to the township of Alpha, along with any individual dwellings on or near the Project, requires detailed community consultation and assessment of potential social impacts. The proximity of occupied dwellings may pose a constraint to future development in terms of social issues such as noise, dust, light and visual amenity. Where possible the mine plan and infrastructure will be designed to minimise any social impacts and achieve acceptable levels at any occupied dwellings. If this is not possible, compensation may need to be negotiated.	M

Aspect	Issues	Risk Level
Native Title, Aboriginal & Cultural Heritage	Cultural heritage investigations (both indigenous and European) will be undertaken in conjunction with relevant stakeholders to identify any areas of cultural significance. Appropriate management and mitigation plans will be negotiated with relevant stakeholders to prevent or minimise impacts to any significant areas. A Cultural Heritage Management Plan (CHMP) will be required with the traditional owners.	M
Environmental Management	There are a range of potential environmental and social impacts that require detailed assessments to be undertaken and to have appropriate management and mitigation plans in place to minimise potential impacts. These include noise, air quality, visual amenity, waste management, greenhouse gases, traffic and transport, accommodation, health and safety, rehabilitation and decommissioning. Without down-playing the significance of each of these issues individually, they all have a similarly detailed assessment approach, and all have tested and established management standards available to be implemented. Their risk to the Project is similar in that they may require significant controls or even alterations to mine planning to be implemented, but none are likely to prevent the Project proceeding. These issues will all be covered separately and in detail in the EIS.	M
Water Management	There are a number of watercourses on and adjacent to the Project area including Alpha Creek, Sandy Creek, Rocky Creek, Well Creek and Lagoon Creek, all tributaries of the Belyando River. Management of both surface water systems and operational process water at the site to ensure it meets regulatory requirements for water quality, flood management and engineering design standards will have a strong regulatory focus and has potential to significantly alter or delay the Project. Potential impacts to groundwater aquifers will also need to be modelled and monitored in detail to ensure any impacts to existing users is within acceptable limits. Both surface water and groundwater studies will be detailed in the EIS.	H
Rail Infrastructure and Port Allocation.	Access to rail infrastructure to transport the mined coal to a port with sufficient allocation available for the proposed tonnages is essential to the Project. Supply chain infrastructure has currently been proposed by other projects. This remains a major risk to the Project.	H
Water Supply	Raw water is required for the mining operation processing facility and supporting infrastructure. While there is no currently available raw water supply to the project area and lack of a reliable water supply could impede the success of the Project, a range of options have been identified (See Section 2.6) and the Proponent is confident a reliable water supply will be sourced and implemented.	H

7 PROJECT ENVIRONMENTAL MANAGEMENT PLAN

Potential construction and operational risks and the effects of proceeding with the coal mine and its associated infrastructure will be identified in the EIS, along with mitigation measures to be implemented during all phases of the Project. An Environmental Management Plan (EMP) will be developed and implemented to identify and manage these risks and effects. The EMP will detail actions and procedures to protect the environmental values and mitigate adverse, and enhance beneficial, environmental and social impacts during the design, construction and operation phases of the project.

The following issues will be addressed in the EMP:

- Relevant environmental policies and procedures;
- Other supporting documentation requirements;
- Annual plans - project objectives and targets;
- Environmental risks;
- Management plans to mitigate risks;
- Relevant procedures;
- Consultation and communication;
- Site education, training and competency;
- Responsibilities of employees, contractors and community;
- Monitoring;
- Incidents/complaints;
- Occupational Health and Safety (OH&S) audits and reviews;
- Data management and reporting; and
- Environmental legislation and other requirements.

In effect, the EMP will become a key reference document in that it will convert the undertakings and recommendations in the EIS into a set of actions and commitments to be followed by designers, constructors and operators. The monitoring, reporting and auditing of the performance criteria, including responsibilities, timing and format will also be specified. The EMP will also make provision, as appropriate, for unseen events by outlining corrective and preventative actions which may be addressed and implemented in these situations.

The EMP will be prepared as a stand-alone document, such that the mitigation commitments associated with the project may be easily referenced separately from the main body of the EIS.

8 COMMUNITY CONSULTATION

The Proponent will undertake an extensive community consultation program to identify the environmental, social and economic interests of the local community and identified stakeholders throughout the EIS process and beyond. To be effective, this program will require ongoing involvement from suitable community representatives working with the Proponent to reach agreement on providing the best outcomes for the mine and the community.

The Proponent will ensure an open and accountable community consultation program is undertaken which meets, and where possible, exceeds all legislative requirements.

The formal EIS process is a public process that requires public notices and requests for comments from the community, initially on the draft TOR and then the draft EIS. Community consultation is an integral component in the development of both the TOR and EIS.

The level of direct consultation will depend on the interest of the individual and their status as either a directly affected stakeholder or an interested stakeholder.

A **directly affected party** is:

- a person on the operational land or any land adjoining it;
- a registered native title body corporate;
- a registered native title claimant;
- a representative Aboriginal/Torres Strait Islander body; or
- a relevant local government for the operational land.

An **interested party** is a person, community group or environmental body in the local government area that the operational land is in.

Public consultation will include:

1. Public notification for the release of relevant documents including the IAS, draft TOR, final TOR, EIS and any supplementary documents required.
2. Posting of relevant documents on publically available websites and having hard copies made available for review at publically accessible locations.
3. Providing Project Information Sheets to indentified stakeholders at relevant checkpoints through the approval process.
4. Contacting those who provide comments on the relevant documents to explain how their submissions are considered in finalising the relevant documents.
5. Various meetings and community information days as necessary to meet the interest of the identified stakeholders.

A full report on all community consultation actions, comments received and outcomes will be included in the final EIS.

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