

stanmorecoal

The Range Project

Initial Advice Statement

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Acronyms

bcm	- Bank cubic meter
bcm/t	- Bank cubic meters per tonne
CHMP	- Cultural Heritage Management Plan
CHPP	- Coal Handling Preparation Plant
CSG	- Coal Seam Gas
DERM	- Department of Environment and Resource Management
DMC	- Dense Medium Cyclone
EIS	- Environmental Impact Statement
EMP	- Environmental Management Plan
EPBC Act	- Environmental Protection and Biodiversity Conservation Act 1999
EPC	- Exploration Permit Coal
IAS	- Initial Advice Statement
JORC	- Joint Ore Reserves Committee
MbCM	- Million bank cubic meter
ML	- Mining Lease
Mtpa	- Million tonnes per annum
NES	- National Environmental Significance
ROM	- Run-of-mine
SEWPC	- Department of Sustainability, Environment, Water, Population & Communities
SBR	- Surat Basin Rail
ToR	- Terms of Reference
WDRC	- Western Downs Regional Council
WICET	- Wiggins Island Coal Export Terminal
WMS	- Water Management System

1.0 Introduction

This Initial Advice Statement (IAS) aims to provide an overview of The Range Project to accompany the submission of the draft Terms of Reference (ToR) for an Environmental Impact Statement (EIS) to the Department of Environment and Resource Management (DERM). This IAS seeks to provide an initial overview of the legislative, environmental, social and economic considerations associated with any future study, investigation, and operation of The Range Project.

Once detailed investigations for the Project are complete, an EIS will be lodged with the DERM as per the requirements of the Final Terms of Reference (ToR) prepared by the DERM.

Note: This revised version of the IAS has been prepared to present an additional transport corridor option from the mine site to the north of Wandoan.

1.1 Project Overview

The Range Project is a proposed open cut coal mining operation on Mining Lease application 55001 approximately 25km south-east of Wandoan in the Surat Basin (**Figure 1**). The area of the Mining Lease application is 5,226 ha.

The Project currently includes the development of two open pit excavations to expose the thermal coal resource. The currently anticipated rate of extraction will produce up to 11.2Mtpa of run of mine (ROM) coal. A total of 142Mt ROM coal is proposed to be extracted within a 25 year mine life (2015 to 2040). The ROM coal will be crushed and processed at an expected yield of around 63% with up to 7.0Mtpa expected to be produced for export. The annual rate of production will ultimately depend on such factors as annual mining schedules, pit geology and market conditions. The proposed project will comprise two open pits, two out of pit overburden dumps, a ROM stockpile, a coal handling and preparation plant (CHPP), initial out of pit tailings storage dam, (secondary in pit tailings storage) and a private transport corridor to the Surat Basin Rail link.

Mine operations will consist of conventional open-cut mining techniques which include topsoil stripping, drill and blast, truck / shovel operations, dozer push waste removal, coal extraction and progressive rehabilitation. The mine will be serviced by administration and workshop facilities and will include a coal processing plant, wash plant, transport corridor, rail loop and train loading facility. Relevant applications for permits/licenses covering the transport corridor, rail loop and train loading facility will be lodged at the appropriate time in the future.

The total workforce required including mining, processing, technical support and management is initially 350 persons, building to an estimated 500 persons as the strip ratio progressively increases. Accommodation for employees will be a central accommodation village in or near Wandoan and / or Miles.

Stanmore Coal Limited (Stanmore Coal) is an active participant in the Wiggins Island Coal Export Terminal (WICET) Project, which is the planned point of export of the thermal coal. Transport to port will be via the Surat Basin Rail Project, which once completed will connect Wandoan with the Moura Railway system near Banana, allowing access to planned WICET port facilities in Gladstone.

1.2 The Proponent

The proponent for the Project is Stanmore Coal Limited (Stanmore Coal). The mining lease application and the existing mining tenements are owned by Comet Coal & Coke Pty Limited (Comet Coal & Coke) a wholly owned subsidiary of Stanmore Coal. Stanmore Coal acquired 100% of Comet Coal & Coke on September 29th 2009.

Stanmore Coal (ASX: SMR), listed on the Australian Securities Exchange (ASX) on 9th December 2009 and is a publicly listed, coal exploration company with tenure interests in Queensland's Surat & Bowen Basins. Stanmore Coal's primary objective is the exploration of its tenure holdings and subsequent release of Joint Ore Reserve Committee (JORC) compliant resource estimates, followed by applications to commercialise such resources where they are proven to be suitable. Stanmore Coal is targeting production in 2015 from The Range project.

As an explorer and developer of coal resources, Stanmore Coal undertakes significant coal exploration within Queensland with the view to expanding the knowledge of coal located within its exploration tenements. Where coal resources are defined that are suitable for open-cut or underground mining techniques, Stanmore Coal plans to pursue development of such tenements for future commercial exploitation. Such commercialisation of coal resources may occur in co-operation with a joint venture participant.

1.3 Project Need

The Range Project will be developed to supply export thermal coal. Demand for high quality thermal coal is expected to increase over the next decade – particularly from China, India and Korea. Australia's proximity to these countries gives it a significant advantage in the market place.

As global demand for thermal coal continues to increase and existing sources of supply trend towards maximum production levels there is little doubt that coal from the Surat Basin will have to play a large part in fulfilling much of the additional demand. The Range Project will be well positioned in the market place to support current and future market demand.

1.4 The Environmental Impact Statement Process

An EIS will be prepared for The Range Project. The EIS will address the DERM's ToR for the Project. The EIS will include an environmental impact assessment of the construction and operation of the Mine and its ancillary activities. The EIS will also include an Environmental Management Plan (EMP) for the Project.

A referral to the Commonwealth Department of Sustainability, Environment, Water, Population & Communities (SEWPC) for matters of national environmental significance (NES), defined by the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), has been lodged, and a decision was made on 4th April 2011 that the Project is a controlled action. The Project will require assessment approval under the EPBC Act 1999 before it can proceed. The relevant controlling provisions are:

- Listed threatened species and communities
- Listed migratory species.

1.5 Environmentally Relevant Activities

The proposed project will include Level 1 Environmentally Relevant Activities (ERAs), as defined in Schedule 2 of the *Environmental Protection Regulation 2008*. These ERA's are listed in **Table 1**.

Table 1: Applicable Environmentally Relevant Activities

ERA	Description	Aggregate Environmental Score
8. Chemical Storage	3 (b) storing the following total quantity of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)— more than 500m3	85
31. Mineral Processing	2 (b) processing, in a year, the following quantities of mineral products, other than coke—more than 100,000t	280

1.6 Project Tenure

Comet Coke and Coal has a granted Exploration Permit for Coal (EPC) over the Project area (EPC 1112), and has applied for a Mining Lease (ML 55001), lodged in November 2010, covering the entire area of the Project.

The area of EPC 1112 is 28 sub blocks (approximately 8,623 ha) and the area of ML 55001 is 5,226 ha.

The transport corridor, rail loop and train loading facility will also be secured by relevant tenure, likely a Mining Lease, and an application for the relevant tenure will be made at the appropriate time.

1.7 Native Title and Cultural Heritage

Native title

Native title is considered to have been extinguished over the area of MLA 55001 and the transport corridor options as a result of extinguishing land tenure grants.

Cultural Heritage

At the time of writing, there are two 'Aboriginal Parties' for the purposes of the *Aboriginal Cultural Heritage Act 2003* (Qld): The Iman People # 2 (QUD6162/98; QC 97/55) are the registered native title claimants over the north west part of the Project area, and the Western Wakka Wakka People (QUD6004/99; QC99/4) are the previously registered native title claimants over the southern and eastern parts of the Project.

There is also a native title claim by the Barunggam People (QUD178/2010; QC10/2-1) but that claim is not a registered native title claim: the claim has not been accepted for registration. At this point, the Barunggam do not have status as an 'Aboriginal Party' for the purposes of the *Aboriginal Cultural Heritage Act 2003* (Qld).

2.0 Proposed Development

The scope of the EIS will address the potential impacts and mitigation measures associated with the development of The Range Project. The following sections describe the various components of the Project.

2.1 Project Location

The Project is located approximately 25km south east of the Wandoan Township and 20km east of Guluguba, Central Queensland. The Project is situated within the area of the Western Downs Regional Council (WDRC) within the Surat Basin. Product coal will travel via a transport corridor to the Surat Basin Rail (SBR) link, and then loaded to trains for railing to WICET for export. **Figure 1** shows the Project's regional location and **Figure 2** shows the location of ML 55001 where the Project is located.

2.2 Proposed Operations

The proposed mine would consist of two open pits, directly adjacent to each other. The maximum extent of the largest open pit is 6km x 5km (approximately 1690 ha) and the smaller open pit is 3km x 1.5km (approximately 340 ha) as indicated in **Figure 3**. The coal seams are located from between 20m to 120m below the natural ground surface. A JORC inferred resource of 219 million tonnes exists within the ML. The open cut operation is planned to produce up to 7 million tonnes of product per year within a 25 year period pending further exploration and pit optimisation. Coal extraction will consist of conventional mining and processing techniques, which includes drill and blast, truck / shovel and dozer push. The ROM coal strip ratio will range from 5 bcm/t to 9 bcm/t over the mine life. The mine life may be extended depending on further exploration and project economics.

Surface area disturbance will be generated mostly by the two open cut excavations, small out-of-pit spoil dumps with some on-site haul roads and mine water management facilities. Disturbed areas will be progressively rehabilitated. The mine plan will be described in the EIS.

A tailings storage dam may be required as part of the Project. The design of the tailings storage dam and chemical composition has not been determined at this stage, but is assumed to be a Regulated Dam and will be designed in accordance with relevant Codes and Guidelines.

At this stage it is proposed that a transport corridor will be required to transfer the coal product to a train loading facility on the Surat Basin Rail link. Two options for this transport corridor are currently being investigated (see **Figure 4**), and the chosen route will be assessed within the EIS. Coal will be stockpiled at the train loading facility and loaded onto trains for railing to WICET.

2.3 Mining Method

The mine layout is shown in **Figure 3**. The mining schedule is based on commencing mining where the coal is at the shallowest depth (i.e. the eastern portion of the open cuts). Mining will progress in a westerly (down dip) direction. The open cuts will become

deeper as mining progresses to the west. The maximum depth of the open cut will be approximately 120m below surface.

In general, the mine will be developed on a number of progressive horizons or benches. Waste from the initial pit (boxcut) will be trucked to out-of-pit waste dumps. As the mine progresses waste will be placed in-pit using dozer push and truck / shovel techniques depending on the waste interval thickness and pit geometry. It is assumed that up to 35% of interburden waste with waste interval thicknesses greater than 4 metres will be placed in-pit using carry dozers.

Production of up to 11.2Mtpa ROM coal will require mobilisation of a mining fleet comprising large excavators supported by smaller excavators. The large excavators will be used to remove the bulk of the overburden. The smaller machines are required to effectively remove thin interburden and partings to minimise coal dilution and also used to load coal. Calculations show that a fleet of large rear dump trucks would be required supported by a fleet of smaller trucks featuring combo style bodies.

An alternative mining scenario investigated considers the use of a rope shovel loading a number of ultra class (nominally 345 tonne capacity) rear dump trucks. Mine design and project financial assessment is ongoing and will help clarify the final mining scenario.

At this stage of mining investigation high level assumptions have been made for the drilling and blasting requirements. All weathered waste material is categorised as free dig for the electric shovel and some blasting may be required to maintain dig productivities. This is less likely to be a requirement for the hydraulic excavators due to their higher breakout force. All fresh interburden with horizon thicknesses less than 4m are ripped to maintain excavator productivities. All interburden with horizon thicknesses greater than 4m are blasted with a nominal powder factor of 0.3kg per bcm - this equates to approximately 57% of all waste mined.

2.4 Processing

ROM coal will either be stockpiled adjacent the ROM receival hopper or direct dumped into the receival hopper depending on the source. Materials that show a high level of fines or poor yield will be blended prior to being fed to the processing plant by mining equipment. The ROM coal will go through primary crushing followed by secondary and tertiary crushing processes, after which the crushed raw coal will be fed to the processing plant.

The beneficiation process will utilise two process routes, a dense medium cyclone (DMC) circuit for the -38mm +1.4mm fraction and a spirals circuit for the -1.4mm +0.125mm fraction, which will have a two-stage desliming process employed for the spirals product. The combined reject from the DMC and spirals routes will be disposed of by pumping the fines tailings material.

The product coal stream from the beneficiation process will be stockpiled for transport to port.

2.5 Product Transport

Transport Corridor

Coal will be transported within the open-cut pit areas to multiple ROM storage areas using overland conveyors or road transport connecting remote ROMs to the main CHPP. Internal haul roads will be designed to minimise environmental disturbance. An off-site transport corridor is proposed to connect the mine to the SBR railhead (see **Figure 4**). A further study is being undertaken to determine the best route, and method of off-site product transport which will include overland conveyor systems and road trains. The final width of the transport corridor to the rail head is not expected to exceed 50m in width and will ultimately depend on the selected transport method. All mine operation haul roads will be within The Range Project existing or future tenure and will not impact on any land holders outside of these boundaries.

Rail

The transport corridor will facilitate delivery of coal to a railhead on the SBR. Coal will be stockpiled and then loaded to trains for railing to WICET. In transport corridor Option A, the infrastructure may include a conveyor over the Leichhardt Highway to facilitate train loading. Approximately 3km of rail track will be required for a spur and balloon loop off the SBR rail line. This will allow for the arrival and departure of single trains for loading. Two-train storage is not considered necessary due to the volume being up to 7Mtpa and with WICET being a stockpile based terminal. The rail loop may be subject to approvals under the *Sustainable Planning Act 2009*. The volumes proposed to be railed on the SBR are within the parameters assessed during the SBR EIS and will not be included in the scope of The Range EIS.

Port

Product coal will be railed to the WICET at Gladstone for export. Stanmore Coal is an active participant in the WICET Stage 2 Project and plans to utilise that facility adjacent to the Port of Gladstone for export. Stanmore Coal's future product export projections are considered as part of the overall demand for facility use at the proposed new terminal. The volumes proposed to be shipped via the WICET are within the parameters assessed during the WICET EIS and will not be included in the scope of The Range EIS.

2.6 Related Infrastructure

Water Supply

A number of water supply options (discussed in **Section 5.2**) are undergoing evaluation as part of the Project's pre-feasibility study. It is estimated that annual water requirement will be in the order of 1500ML per annum. Options include a branch pipeline from the proposed Sunwater Nathan to Dalby pipeline from the proposed Nathan Dam and an off take agreement with a Coal Seam Gas (CSG) producer for by-product water generated during gas extraction. The Nathan Dam and associated pipelines are currently undergoing a separate EIS process. The branch water pipeline is proposed to be located underground within the existing Guluguba to Downfall Creek road reserve (**Figure 5**), subject to further discussions with the administering agency for the road reserve. An alternative water pipeline route co-incident with transport corridor Option B is also being assessed.

Power Supply

The main power requirements are CHPP operations and a PH4100 shovel (if selected). The expected demand will be in the order of 10MW to 15MW per annum. Powerlink are planning a major trunk line west of Gulugaba and Ergon Energy is planning for distribution around the region. It is understood that Ergon will be the proponent for the power supply as the licensed power distributor in the region, with approvals likely to be granted under the *Electricity Act 1994* (Qld). The power requirements will be investigated further in the pre-feasibility study. It is proposed that a spur powerline would be located within the existing Gulugaba to Downfall Creek road reserve, subject to further discussions with the administering agency for the road reserve (refer to **Figure 5**). The scope of The Range project EIS is restricted to the spur powerline only. Another supply option to be considered is the construction of a small gas fired power utility near site utilising CSG supplied from nearby pipelines.

Accommodation Facilities

The current accommodation strategies include utilising a central accommodation village located at or near Wandoan (operated by an external provider) sufficient for the drive in-drive out members of the workforce. This village would be developed, owned and operated by an external party, including obtaining the relevant development approvals. The MAC group currently has preliminary planning approval for construction of a village near Wandoan that would potentially satisfy the accommodation requirements for The Range project. This accommodation village is not included in the scope of The Range EIS.

Mine Infrastructure

Mine infrastructure for the Project would consist of:

- communications infrastructure;
 - access road to site;
 - on site light vehicle access roads and heavy vehicle haul roads;
 - a water management system, raw water storage and sediment control structures;
 - explosives storage facilities;
 - fuel and oil storage facilities;
 - high voltage transmission lines/poles, substation and reticulation facilities;
 - maintenance workshop, warehousing facility, offices and associated amenities; and
 - coal handling and preparation facilities, spoil dumps and tailings dams.
- Transport corridor

Further detail on the infrastructure facilities will be outlined in the EIS once the Project's pre-feasibility study has been completed.

Roads

At this stage, one public road may require relocation for the Project and some other roads may require upgrades. **Table 2** details the roads that pass through the Project area.

Table 2: Roads within the Project area

Road	Owner	Type	Land Use	All/Part
Knights Road	WDRC	Road Reserve	Road	Part
Zillmans Road	WDRC	Road Reserve	Road	Part
Middle Creek Road	WDRC	Road Reserve	Road	Part
Guluguba Downfall Creek Rd	WDRC	Road Reserve	Road	Part
Old Chinchilla Rd	WDRC	Road Reserve	Road	Part
Roche Creek Road	WDRC	Road Reserve	Road	Part
Nathan Road	WDRC	Road Reserve	Road	Part
Unnamed Road (between Knights and Middle Creek Roads)	WDRC	Road Reserve	Road Reserve	All

Stock Routes

There is an existing stock route that is adjacent to ML55001 at its southern end (see **Figure 6**). In addition, transport corridor Option B crosses a stock route located within Roche Creek Road Reserve. The potential impact on these stock routes will be assessed during the EIS.

2.7 Water Management

The mine operation has the potential to impact on downstream water quality as well as the groundwater resources. Accordingly, a Water Management System (WMS) will comprise a network of water management infrastructure that will allow for flexibility in transport and storage of water around the site. The key water management goal for the Project will be to minimise downstream impacts from the proposed mining operation.

Water sources and their corresponding control strategies include:

- runoff from undisturbed upstream catchments will be passed through the proposed mining areas in defined drainage corridors;
- overland flow and runoff from catchments disturbed by mining activities will be directed through sediment basins where necessary, to reduce sediment load, and allowed to flow off-site (subject to water quality licence limits);
- runoff from mining pits and coal stockpiles, and industrial areas such as workshops, will be directed to environmental dam/s for storage to be used as a source of water for dust suppression as required, with no planned discharge from environmental dams; and
- mine process water from the Coal Handling and Process Plant (CHPP) will be managed in dedicated tailings storage facilities.

Additional ground and surface water hydrology, riparian vegetation and aquatic ecology studies will be required for the development of the WMS on the Project Area, and will be conducted during the EIS process.

2.8 Waste

Waste materials, excluding tailings from the CHPP and excavated waste rock spoil, generated on-site will require disposal. The anticipated waste streams and their sources that are likely to be produced by the Project include:

- general waste, typically consisting of putrescible wastes and other general wastes. These wastes will primarily be generated at warehousing, workshop, office and crib hut facilities;
- general recyclable wastes, consisting of paper, cardboard, recyclable plastics, glass, aluminium, and steel cans. These wastes will primarily be generated at warehousing, workshop, office and crib hut facilities;
- scrap steel, primarily generated during workshop activities;
- waste hydrocarbons, including oils, greases, oily water, oil and fuel filters, and oily rags, generated primarily from workshop and field service activities;
- waste chemicals, other than waste hydrocarbon fluids, generated primarily from the workshop and field service activities;
- waste tyres, generated primarily from workshop and field service activities;
- waste batteries, generated primarily from workshop and field service activities; and
- sewage generated at workshop, office and crib hut facilities.

Reject and tailings management will be required since the ROM coal will require washing on-site. Plant water consumption and water availability are the major considerations in the selection of the most appropriate method of tailings disposal. The method of reject and tailings disposal will be ascertained in conjunction with the water resource study as part of the EIS assessment.

3.0 Community Consultation

The purpose of community and stakeholder consultation during the environmental impact statement phase is to ensure that all relevant stakeholders are aware of the Project and have the opportunity to comment on issues of relevance to them. As part of the EIS for the mine development, it is proposed that community consultation will be conducted with the local community and other relevant stakeholders.

3.1 Consultation Program for the Project

During the EIS process a wider community consultation will take place to ensure that all relevant stakeholders are aware of the Project and have the opportunity to comment on issues of relevance to them. Accordingly, a comprehensive community and stakeholder consultation program will be enacted during the EIS process. The program will be conducted throughout the EIS preparation phase and will be integrated with environmental impact assessment and project planning. The program will include consultation with all affected and interested persons and any other relevant stakeholders identified during the consultation program.

The aim of this program will be to:

- establish a transparent and open communication with all stakeholders;
- provide stakeholders with information regarding the Project;
- to facilitate understanding of the Project by stakeholders;
- provide a mechanism for stakeholder contact with the Project team;
- identify any issues and concerns that stakeholders may have with the Project;
- ensure issues raised by stakeholders are available for relevant studies being undertaken during the EIS;
- address relevant stakeholder issues during the environmental impact statement process;
- provide feedback to stakeholders regarding their issues raised, identifying actions taken to address their issues; and
- enable stakeholder involvement in the development of mitigation measures for the Project.

The following sub-sections outline the various strategies that may be involved as part of the consultation program.

Consultation with Government Assessment Agencies

Meetings with relevant government agencies to provide details of the proposed project will be held. There may also be site visits arranged, to further assist the agencies to understand the Project scope.

Consultation with Government Representatives

Individual meetings will be held with the Federal, State and local Government representatives of the Project site.

Consultation with Landholders and Neighbours

The landholders and near neighbours will be made aware of the Project proposal during the public notice of the ToR. Further discussions will be conducted individually with the landholders during the development of the Project. Landholders concerns will be taken into account in the design and construction of the Project.

Consultation with Local Community Groups

Representatives of community groups with a specific interest e.g. the local Landcare Group will be consulted to obtain comments which will be incorporated into the design wherever practical.

Consultation with Aboriginal Representative Bodies

Discussions will be held with local Aboriginal People concerning the Project. Discussions will focus on the impacts of the Project on cultural heritage materials and values.

Advertisements and Newsletters

Advertisements will be placed in local, State and National newspapers, where appropriate, to provide information and updates regarding the Project, and consultation activities. Newsletters will be distributed from time to time to provide local residents, landowners, local community and stakeholders with an overview of the Project, upcoming consultation activities, and progress against legislative processes. Feedback forms will be included in the newsletters to encourage feedback from newsletter recipients.

3.2 Stakeholders

Stanmore Coal has engaged with a number of key stakeholders as part of the assessment and refining of mine, port and rail corridor options, construction and operations. These stakeholders, consulted as part of preliminary Project studies, and who will continue to be consulted as Project design and engineering progress, include:

- Private Land Holders;
- Native Title Holders;
- Industry Stakeholders (including overlying CSG tenures and CSG pipelines);
- State Government Agencies and Departments;
- Commonwealth Government Agencies and Departments;
- Utilities and Transport Infrastructure; and
- Local Council.

3.3 EIS Consultation

Consultation as part of the EIS, environmental authority and mining lease processes will occur in three main phases, being preparation of the Terms of Reference, public display of the EIS, and post-EIS for the environmental authority and mining lease approvals process.

Terms of Reference

The scope of the EIS will be defined initially in the draft Terms of Reference and will involve:

- newspaper advertisement;
- notification to all interested and affected persons; and
- submissions from the community and statutory stakeholders.

The advertising of the draft Terms of Reference will be undertaken by the DERM with submissions to be provided to DERM. The TOR for the Project will be finalised by DERM following submissions.

EIS public display and feedback

Once the EIS has been submitted to DERM and allowed to proceed to publication, Stanmore Coal will publish an EIS Notice, advising stakeholders that submissions on the EIS can be made during the submission period. The EIS will be publicly notified and displayed via:

- newspaper advertisement;
- community newsletter to stakeholders;
- EIS provided to stakeholders, upon request;
- meeting with individual stakeholders, where required;
- public displays; and
- community meetings.

Post-EIS Consultation

Assuming that DERM approves the EIS, further post-EIS consultation of the Project will be undertaken as part of obtaining public comment on the draft environmental authority. These documents will be made available for comment via:

- newspaper advertisement;
- community newsletter to stakeholders;
- meeting with statutory stakeholders, where required;
- public displays; and
- ongoing community meetings.

4.0 Existing Environment

4.1 Land Systems

Land Use

The Mining Lease application covers some 5,226ha. The mine area is predominantly used for low intensity grazing and some cropping. Most of the land has been impacted by vegetation clearing for agricultural purposes. A portion of Quandong State Forest is immediately adjacent to the south of the Mining Lease.

Soils and Land Capability

The general soil type in the area is defined as uniform fine cracking, smooth faced pedis, grey clay horizon underlain by weathered rock before 1.5 m.

Field investigations will be conducted during the EIS to confirm the soil types, distribution and land suitability classification of the Project area.

Topography

Regional topography in the surrounding is gentle to moderately undulating or rolling lands. The site is relatively flat due to the nature of the existing grazing land. The elevation over ML55001 ranges from 340 to 390 m above mean sea level.

Geology

The Range Project area lies within the Surat Basin, which is continuous with the Moreton Basin across the Kumbarilla ridge near Dalby. Regionally the Walloon subgroup dips gently towards the south-west, and is comprised of a thick sequence of interbedded coal and sediments with two major coal measures named the Juandah and the Taroom.

The stratigraphic units in the Project area are from within the Taroom Coal Measures. The immediately overlying Tangalooma sandstone unit is known to occur in the western portion of the tenement. In the east of the tenement the Taroom Coal Measures are unconformably overlain with some ferruginous sandstone which is interpreted as being Tertiary age.

The Taroom Coal Measures are interpreted to sub-crop in the eastern part of the ML, with the main coal seams within the drilled out area of the ML occurring at depths of between 20 and 120 metres. The seams dip towards the west at < 1 degree. Within the Project area the coal seams have been identified by previous exploration by Shell Coal during the early 1980s and more recent exploration by Comet Coal and Coke.

4.2 Climate

Rainfall in the Wandoan and Theodore region is variable and unreliable, with most falls in the warmer months. The average annual rainfall is 618mm, mostly occurring in summer (Bureau of Meteorology, Taroom Post Office Weather Station).

The Project area experiences predominantly warm weather. On average, the highest relative humidity is in February. The monthly averages show December to be the hottest month and June to be the coldest (Bureau of Meteorology, Wandoan Post Office Weather Station).

4.3 Hydrological Characteristics

Surface Water

Several high order ephemeral drainages are located within the Project site. Drainages located in the north-western half of the proposed project site are tributaries of Downfall Creek and drain to the South west. Downfall Creek is within the catchment of the Dawson River. Drainages are also located in the south-eastern half of the Project site; these are tributaries of Dogwood Creek and drain to the south. Dogwood Creek is within the catchment of the Condamine River. The proposed western open pit will impact on the intersecting drainage lines flowing to Downfall Creek, overland flow will need to be diverted around this pit. The proposed southern open pit will also impact a small portion of the intersecting drainage line. Overland flow and drainage design will be included in the EIS process.

Ground Water

Exploration drilling has indicated that the Hutton Sandstone Aquifer of the Great Artesian Basin is the dominant aquifer underlying the site. Stanmore Coal is currently undertaking hydro-geological investigations to determine groundwater characteristics at the site. Aquifer systems within the Hutton Sandstone occur below depths of 200m which is well below the base of pit design. Detailed information about the groundwater resources is unknown at this stage. It is not proposed to directly extract water for mining activities from the Great Artesian Basin aquifers that are used for domestic or stock watering.

No groundwater impacts are anticipated on aquifers used for domestic or stock watering, however a full understanding of hydraulic characteristics, monitoring and safeguard triggers will ensure sound groundwater management. A detailed groundwater study will be part of the EIS.

4.4 Biological Characteristics

Existing Vegetation

The vegetation assemblages present on the site will undergo a full ecological assessment during the EIS.

There are approximately 60ha of Endangered Regional Ecosystem 11.9.5 (ERE 11.9.5) which is described as *Acacia harpophylla* (Brigalow) and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks present on the proposed mining disturbance area. In addition, there are areas of "of concern" regional ecosystems and areas of High Value Regrowth Vegetation either on or adjacent to the mining disturbance areas. The Quandong State Forest is located near the Project area.

Existing Fauna

Terrestrial, avian and aquatic fauna are expected to be typical of the central Surat Basin. Habitat useful to a wide range of faunal species is not evident. Desktop surveys and field studies will be required to be completed for the EIS.

EPBC Act Referral

Desktop surveys over ML 55001 were recorded using the Department of Environment and Resource Management Wildnet Database Search and the EPBC Act Protected Matters Search.

The Wildnet Database search was completed over ML 55001, from a central coordinate with a 10 km radius. The search retrieved 25 records, all of which are designated as Least Concern under the *Nature Conservation Act 1992*.

The EPBC Act Protected Matters Search was completed on ML55001, from a central coordinate with a 10 km radius. The following matters of National Environmental Significance were recorded as known or likely to occur within the search site:

- 2 Wetlands of International Significance,
- 2 Threatened Ecological Communities,
- 20 Threatened Species, and
- 11 Migratory Species.

The following other matters protected by the EPBC Act were also recorded:

- 11 Listed Marine Species.

The following species were listed as “endangered”:

- Brigalow (*Acacia harpophylla* dominant and co-dominant),
- Weeping Myall Woodlands,
- Swift Parrot (*Lathamus discolor*),
- Star Finch (eastern), Star Finch (southern) (*Neochmia ruficauda ruficauda*), and
- Northern Quoll (*Dasyurus hallucatus*).

A referral to the Commonwealth Department of Sustainability, Environment, Water, Population & Communities (SEWPC) for matters of National Environmental Significance (NES), defined by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), has been lodged, and a decision was made on 4th April 2011 that the Project is a controlled action. The Project will require assessment approval under the EPBC Act before it can proceed. The relevant controlling provisions are:

- Listed threatened species and communities
- Listed migratory species

The impact of the proposed project on fauna and flora will be assessed during the EIS process.

4.5 Noise and Vibration

There is limited noise data currently available for the local area. Background noise levels in the existing environment are typical of most rural areas. These would vary depending on the extent of traffic, machinery operations and general activities in the area.

Additional studies will be undertaken as part of the EIS to establish potential changes to background noise levels, as a result of increases in noise levels from the proposed Project.

4.6 Air Quality

There is limited air quality data currently available for the local area surrounding the Project area. Existing air quality in the Wandoan area is generally expected to be characteristic of a largely undeveloped rural environment. Local sources of particulates are expected to include general rural and residential activities, use of local roads, bushfires and high wind conditions occurring.

Additional studies will be undertaken as part of the EIS to establish potential changes to air quality as a result of increases in dust levels from the proposed Project.

4.7 Socio-Economic Conditions

The initial mine location is situated in a rural area with the mine centre approximately 25km south-east of the Wandoan Township and 20km east of Guluguba. The total workforce required including mining, processing, technical support and management is initially 350 persons, rising to approximately 500 during production.

Social and Economic assessments will be undertaken as part of the EIS to establish potential impacts associated with the proposed Project.

4.8 Cultural Heritage Values

Following a review of the DERM Aboriginal Cultural Heritage Register and Database, and any existing literature relating to Indigenous cultural heritage in the Project area, Stanmore Coal will undertake appropriate cultural heritage surveys and the development of a cultural heritage management plan for the various aspects of the Project with the relevant Aboriginal Parties pursuant to Part 7 of the *Aboriginal Cultural Heritage Act 2003* (Qld).

Investigation of non-indigenous cultural heritage values will be undertaken including the review of cultural heritage databases such as the EPBC Protected Matters Search Tool and the Register of the National Estate will be undertaken as part of the detailed EIS for the Project.

5.0 Potential Impacts and Management Requirements

5.1 Land Systems

The Project area is currently being used predominantly for low intensity grazing and some cropping. The proposed mining infrastructure (i.e. open cut, spoil dumps, haul roads etc) will impact on the existing land use. Factors which can impact on the long term land use of the site include climatic factors, geotechnical factors, chemical factors, and geomorphological factors such as erosion rates. These factors will be investigated during the EIS to assist in determining the associated rehabilitation design parameters and the most appropriate post-mine land use.

As the mine develops, progressive rehabilitation of spoil dumps, voids and other mining areas will occur in order to minimise the total land area disturbed by mining at any one time. Land use capability impacts will be limited to areas directly affected by mining activities. The degree to which the land use capability is impacted upon by the Project will be documented in the EIS. This will include plans for progressive rehabilitation and decommissioning. Proposed monitoring of rehabilitated areas will also be outlined in the EIS and EMP.

5.2 Water Management and Hydrological Impacts

It is estimated that at the proposed coal production rate the water requirement will be approximately 1500 ML per annum. The demand is predominantly water required for coal preparation and for on-site haul road dust suppression.

Dawson River

The principal water supply option being considered is a bi-directional pipeline from the proposed Nathan Dam on the Dawson River. The Nathan Dam and Nathan to Dalby water pipeline is proposed by Sunwater and is subject to a separate EIS and licensing process.

Sunwater have been engaged to draft supply options for the Range project. The Range Project EIS scope includes the spur water pipeline only.

Coal Seam Gas By-Product Water

Water extracted by coal seam gas (CSG) operations could be available to the Project. Water quality in some instances is considered not suitable for use without treatment or dilution. Discussions with CSG companies on quantity of water, quality and availability will be part of the considerations for the overall water supply and utilisation model.

Overland Flow

Capturing overland flow is an option subject to approvals but requires hydrological modelling with necessary reservoirs to consider overall capability in dry times. The Range Project may include some licensed capture of overland flows as well as runoff from disturbed areas within the mine. The EIS will include studies of overland flow and capture.

Groundwater

While exploration drilling has provided some data on groundwater the possible magnitude of flows into the open-cuts is considered at this stage to be low. A groundwater study will be part of the EIS.

5.3 Biological Impacts

Clearing of remnant and non-remnant vegetation will be necessary for the Project, however much of the proposed mine area has been extensively cleared of remnant vegetation and has been grazed by cattle for many years. A detailed flora and fauna assessment will be undertaken as part of the EIS process.

5.4 Noise and Vibration Impacts

The proposed operation will be required to meet noise and vibration standards for occupational health and safety, and the *Environmental Protection Act 1994*, including the Environmental Protection (Noise) Policy 2008. The latter two will ensure that sensitive receptors are not adversely affected by any noise or vibration generated by the Project.

Detailed noise and vibration studies will be undertaken as part of the EIS process to assess potential noise and vibration issues and to develop appropriate mitigation strategies as required.

5.5 Air Quality Impacts

The proposed operation will be required to meet air quality standards for occupational health and safety, and the *Environmental Protection Act 1994*, including the Environmental Protection (Air) Policy 2008.

Detailed air quality studies will be completed as part of the EIS process to assess potential air quality issues and to develop appropriate mitigation strategies.

5.6 Visual Amenity Impacts

The EIS will investigate impacts to visual amenity generated by the Project. Visual impacts produced by the mine's operations will be minimised by progressive rehabilitation of areas affected by mining activities.

5.7 Socio-Economic Impacts

It is anticipated that Wandoan and surrounding local towns, in particular Taroom, Dalby and Toowoomba, will provide some of the construction workforce, with the remainder being sourced from other regions. The production workforce will be sourced locally where possible and from other areas to match the skills profile of mine operations.

Facilities to house the construction and operations workforces will be evaluated as part of the feasibility studies. Current accommodation strategies include utilising the proposed MAC Group accommodation village located at Wandoan sufficient for the drive in-drive

out members of the workforce. The scope of this EIS will not include the development or approval of this accommodation village.

5.8 Cultural Heritage Impacts

Stanmore Coal will develop a cultural heritage management plan for the various aspects of the Project with the relevant Aboriginal Parties so as to assess the likely effects on sites of Indigenous cultural heritage values, avoid damage to cultural heritage and develop a means of monitoring, protecting and managing cultural heritage values.

Stanmore Coal will develop appropriate management plans for monitoring, protecting and managing non-indigenous cultural heritage values, where appropriate.

5.9 Mine Infrastructure Impacts

Waste Generation

General and industrial waste management strategies will be developed in the EIS. Likely wastes to be generated during the construction stage include general wastes, green waste, concrete materials, metals, waste hydrocarbons, timber, tyres, sealant/resin and paint materials, sewage effluent, vehicle wash-down, and exhaust emissions. Wastes that are anticipated to be produced during the operations phase include green waste, batteries, general waste (e.g. paper, cans cardboard), scrap metal, tyres, sewage and tailings and reject waste.

Reject and tailings will be generated from the washing of ROM coal. Plant water consumption and water availability will determine the most appropriate method of tailings disposal. The method of disposal will be ascertained in conjunction with the water resource study as part of the EIS process. Reject material will be returned to the mine pits or spoil dumps using mine trucks for burial.

Storage of Materials

Additional fuels, oils, and detergents will be stored in appropriate facilities on site during the construction and operational phases of the Project. Hazardous materials such as batteries and hydrocarbon materials will be stored in accordance with the relevant Australian Standards to ensure that any spillages are contained. Standard operating procedures including an emergency response process will continue to be implemented for the Project.

5.10 Transport Impacts

A transport impact assessment will be undertaken to address potential increases in traffic during the construction and operations phases of the Project. A Road Impact Assessment for the Project will be developed in consultation with the Department of Transport and Main Roads, and the WDRC and incorporated into the EIS.

Potential impacts of the rail transport of the coal were assessed as part of the proposed Surat Basin Railway Project EIS which was conducted in parallel with the Wandoan Coal Project EIS. The EIS for the Surat Basin Railway was approved by the Co-ordinator General in accordance with the *State Development and Public Works Organisation Act 1971* on 9 December 2010. Potential impacts of the proposed port handling of the coal at

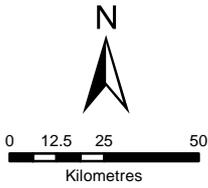
Gladstone were assessed as part of the Wiggins Island Coal Project EIS. This EIS was approved by the Co-ordinator General on 7 January 2008.

During this early planning phase, Stanmore Coal is working actively with WDRC, adjoining coal companies, local landholders, the DME and SBR to minimise impacts on the community and consolidate infrastructure where possible.

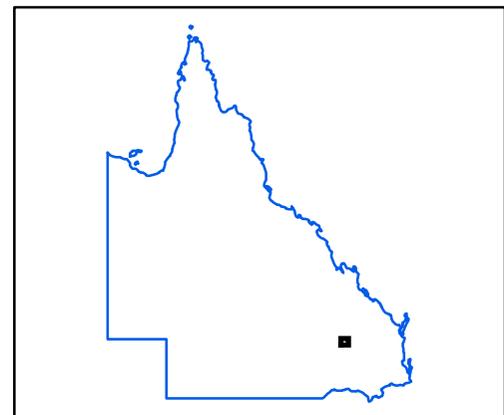
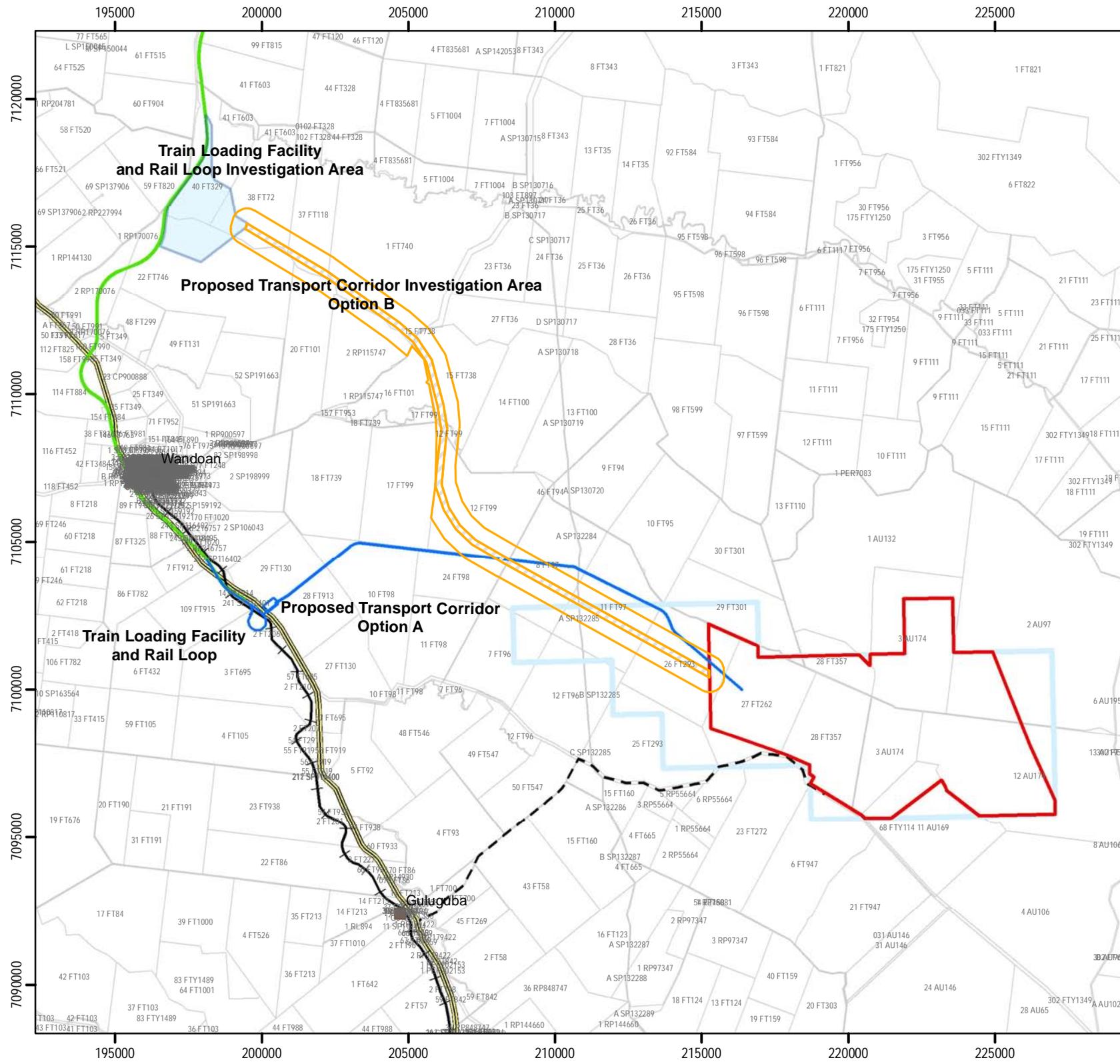


Legend

- The Range Project - ML 55001
- Coal Tenement
- Town
- Coal Export Port
- Main Road
- Railway
- Proposed Surat Basin Rail link



	Environmental & Licensing Professionals
Drawn: CS Checked: RD Datum: GDA94	Fig 1: Regional Project Location ML 55001
Date: 17/03/2011 Client: SMRGEN	Stanmore Coal Limited

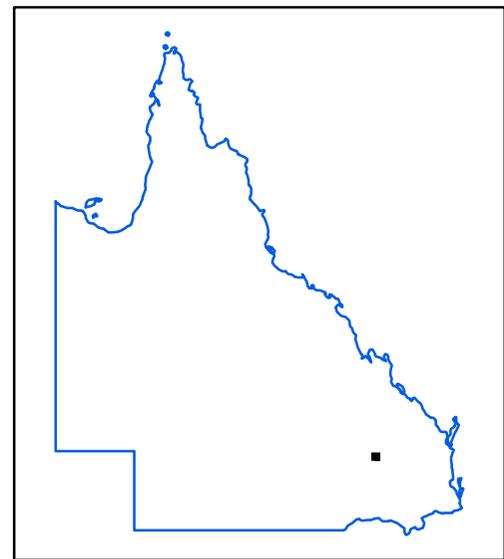
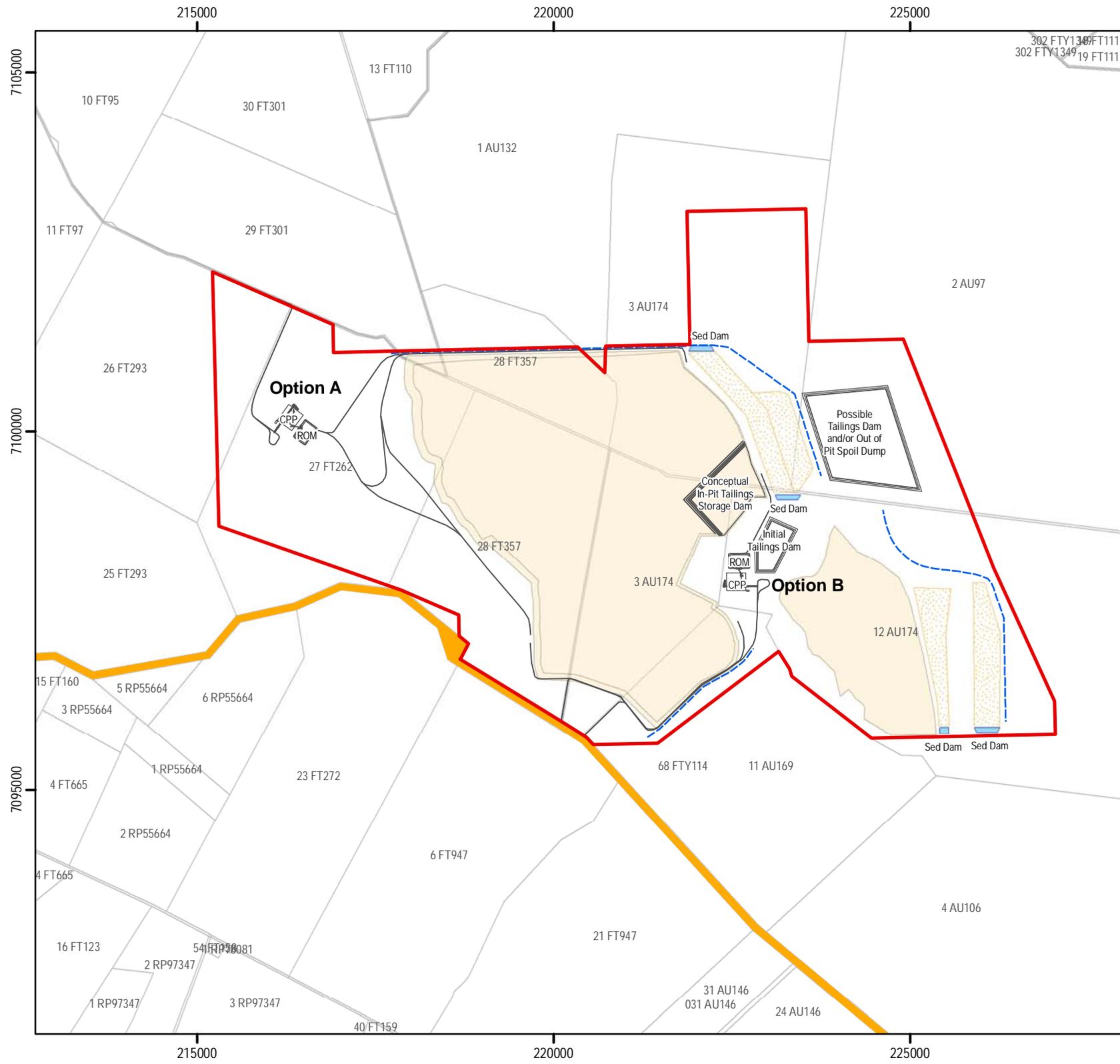


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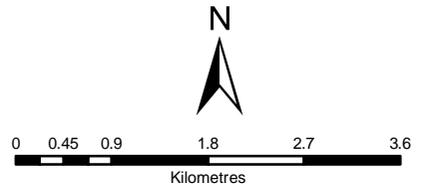
- Transport Corridor Investigation Area - Option B
- Rail Loop Investigation Area - Option B
- Transport Corridor - Option A
- The Range Project - ML 55001
- Towns
- Proposed Surat Basin Rail link
- Railway
- Leichardt Highway
- Preliminary Power/Water Route
- EPC 1112
- Western Downs Cadastre



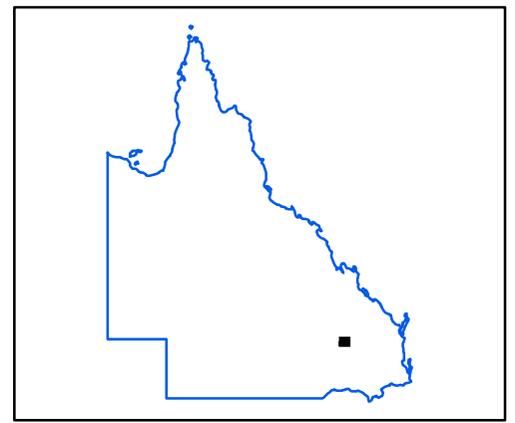
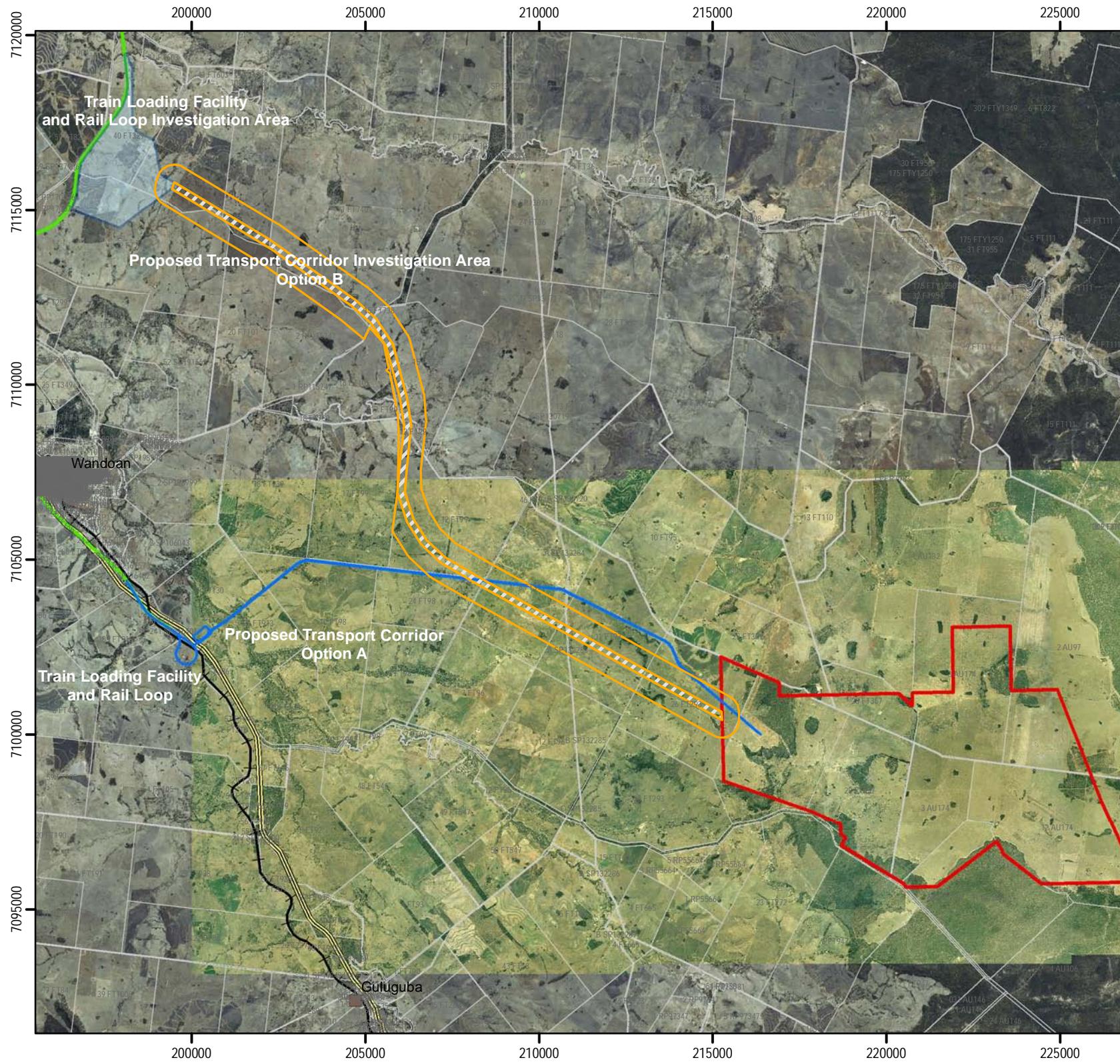
	Environmental & Licensing Professionals
	Fig 2: Project Location
Drawn: CS Checked: RD Datum: GDA94, Z56	Stanmore Coal Limited
Date: 23/09/2011 Client: SMRGEN	



- Legend**
- ▭ The Range Project - ML 55001
 - ▬ Proposed Surat Basin Rail link
 - ▬ Stock Routes
 - ▬ Infrastructure
 - - - Clean Water Bund
 - Out of Pit Spoil
 - Pit Limit
 - Western Downs Cadastre



	Environmental & Licensing Professionals
Drawn: CS Checked: RD Datum: GDA94, Z56	Fig 3: The Range Proposed Site Layout
Date: 06/04/2011 Client: SMRGEN	Stanmore Coal Limited

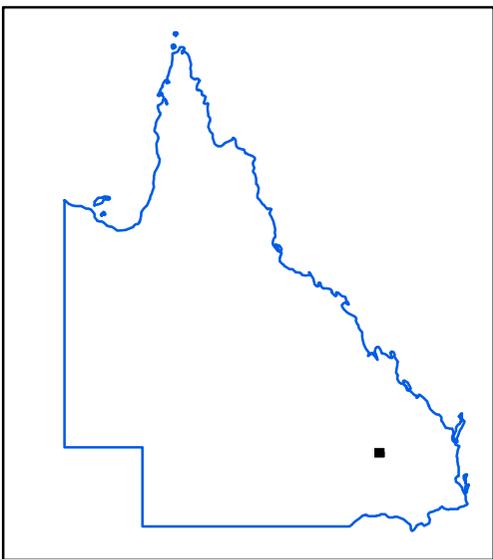
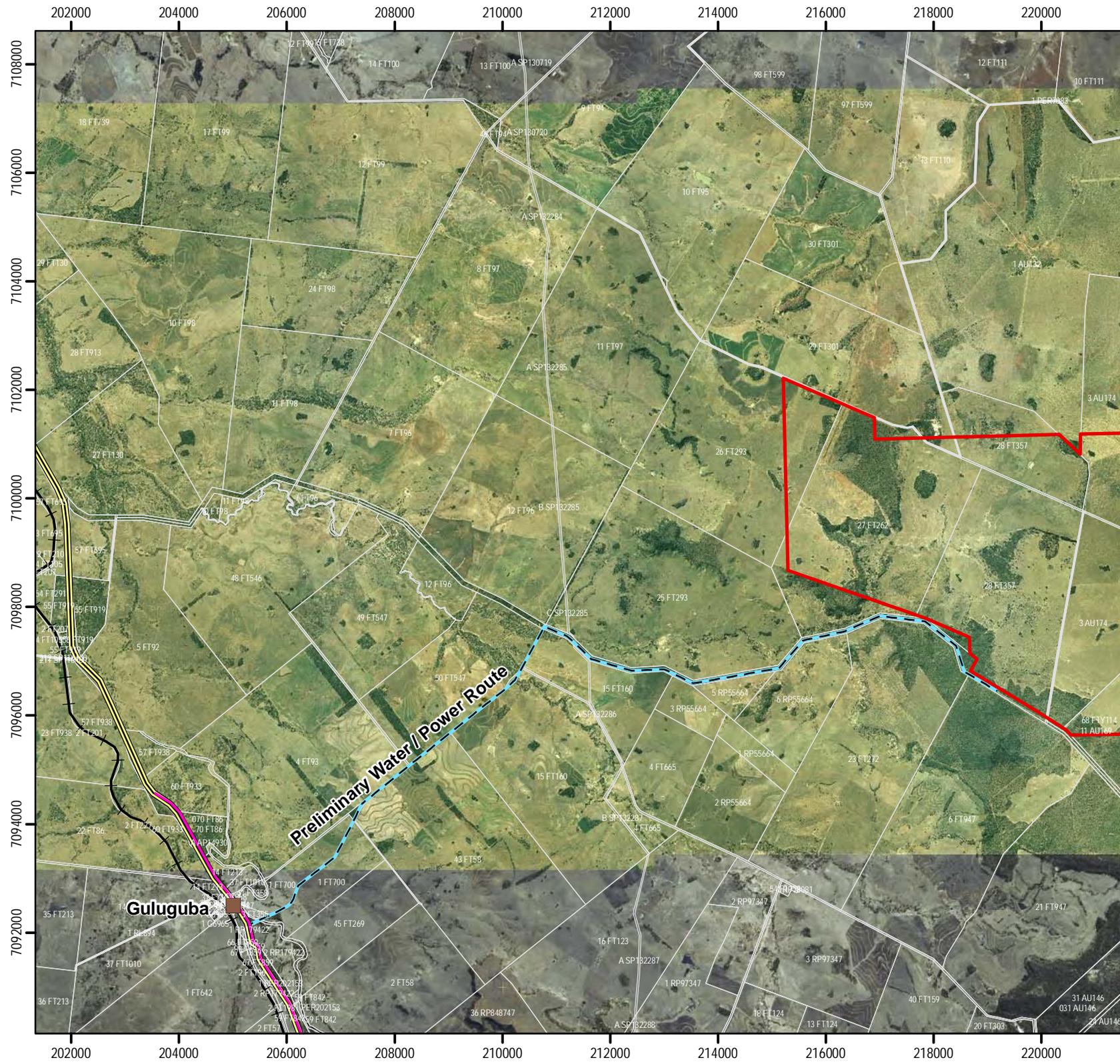


Legend

- Transport Corridor Investigation Area - Option B
- Rail Loop Investigation Area - Option B
- Transport Corridor - Option A
- The Range Project - ML 55001
- Towns
- Proposed Surat Basin Rail link
- Railway
- Leichardt Highway
- Western Downs Cadastre



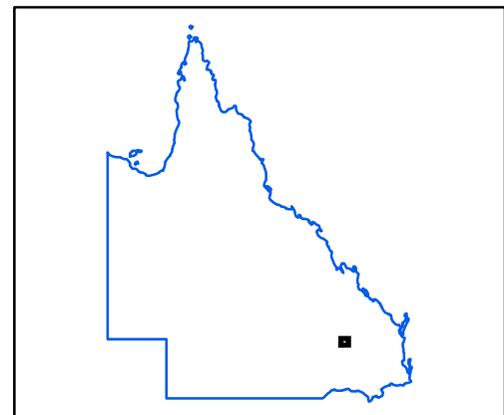
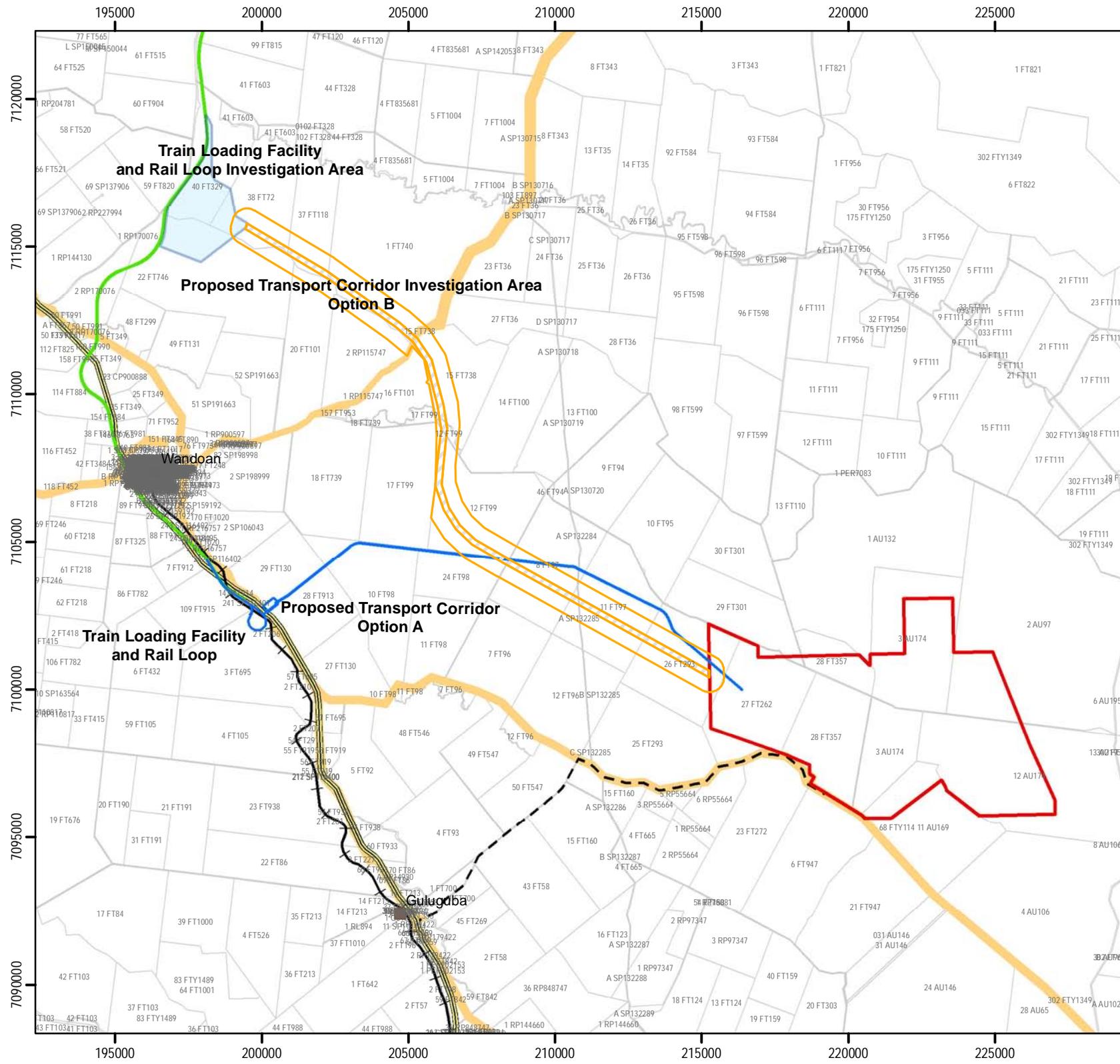
	Environmental & Licensing Professionals
	Fig 4: Proposed Transport Corridor Options
Drawn: CS Checked: RD Datum: GDA94, Z56	Stanmore Coal Limited
Date: 23/09/2011 Client: SMRGEN	



- Legend**
- The Range Project - ML 55001
 - Town
 - Leichardt Highway
 - Railway
 - Proposed Surat Basin Rail link
 - Preliminary Power/Water Route
 - Western Downs Cadastre



	Environmental & Licensing Professionals
Drawn: CS Checked: RD Datum: GDA94, Z56	Fig 5: Preliminary Power/Water Route
Date: 06/04/2011 Client: SMRGEN	Stanmore Coal Limited



Legend

- Transport Corridor Investigation Area - Option B
- Rail Loop Investigation Area - Option B
- Transport Corridor - Option A
- The Range Project - ML 55001
- Towns
- Proposed Surat Basin Rail link
- Railway
- Leichardt Highway
- Preliminary Power/Water Route
- Stock Routes
- Western Downs Cadastre



	Environmental & Licensing Professionals
	Fig 6: Stock Route Locations
Drawn: CS Checked: RD Datum: GDA94, Z56	Stanmore Coal Limited
Date: 23/09/2011 Client: SMRGEN	