

The background of the slide features a large, abstract graphic. It consists of a grid of dots that form a funnel or hourglass shape, tapering towards the center. The dots are arranged in a pattern that creates a sense of depth and perspective. The top and bottom sections of the slide are a solid light beige color, while the middle section, where the text is located, is a dark navy blue. The dots in the funnel shape are a light beige color, matching the top and bottom sections.

Chapter 5

Project Location

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5. PROJECT LOCATION

5.1 Introduction

This chapter describes the location of the project and all associated infrastructure in a state, regional and local context. Views into and out of the site are dealt with in the Landscape and Visual Amenity assessment (**Chapter 24**).

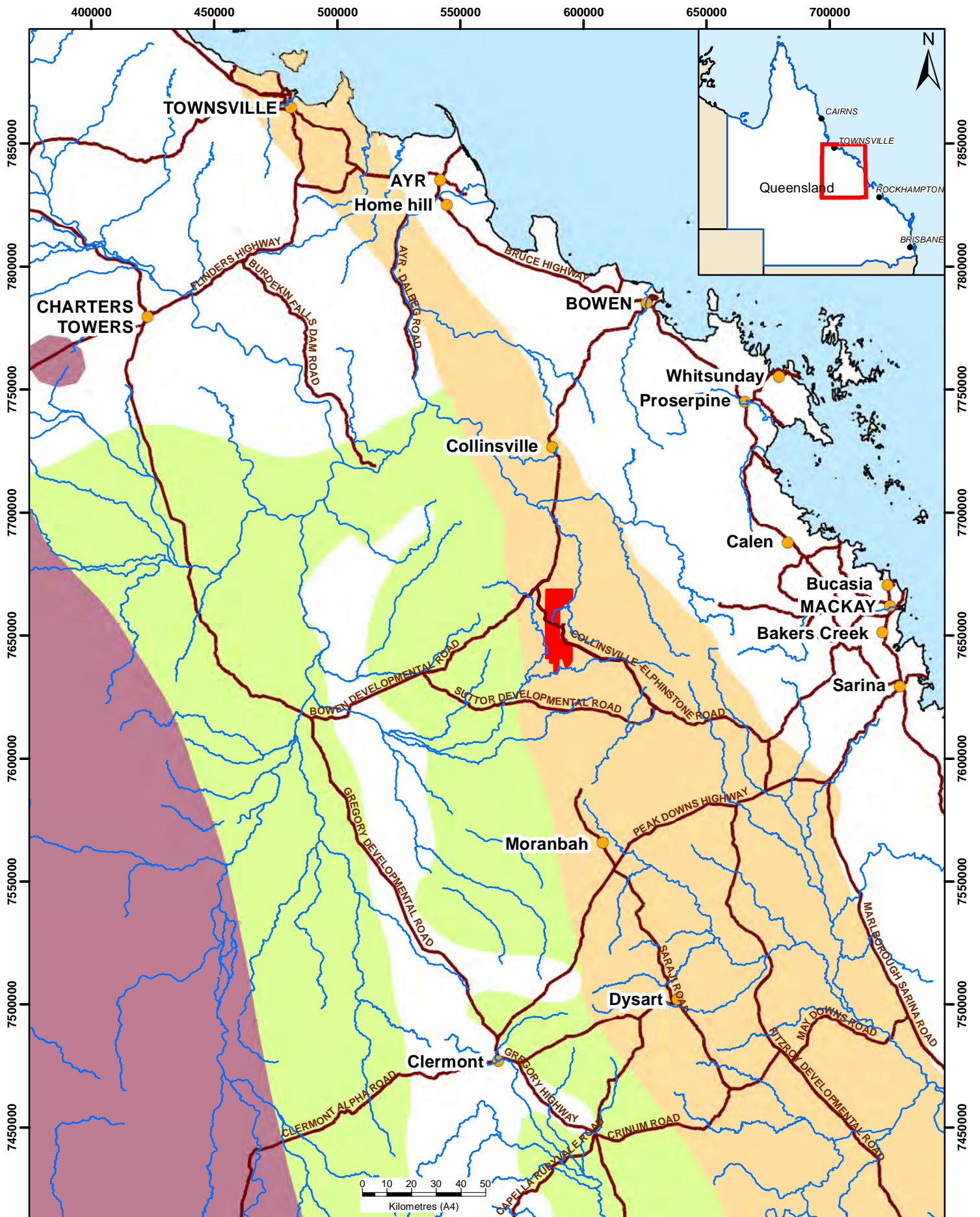
5.2 State Context

The Byerwen Coal project (“the project”) is located in Queensland, in an area of coal resources known as the Bowen Basin.

The Bowen Basin is an area of coal reserves and mining related communities that extends over approximately 60,000 square kilometres of Central Queensland from Collinsville in the north to Theodore in the south.

The Bowen Basin has 47 operating coal mines that produce all of Queensland's high-grade coking coal, and much of the export-traded thermal coal. These mines produced 180 million tonnes of saleable coal in 2009-10, representing 87 per cent of the state's total output, and directly employ around 29,550 full-time equivalent (FTE) positions (as at 30 June 2011) (DNRM, 2012).

Figure 5-1 shows the location of the project within the Bowen Basin relative to Queensland's major towns.



Legend

- | | | |
|---|---|---|
| Project Area | Watercourses | Geological Basin |
| Main Towns | Main Roads | Bowen |
| | | Drummond |
| | | Galilee |

Project Location State Context



Figure 5-1

Byerwen Coal Project

Date: 21/01/2013

Author: shahram.nasiri

Map Scale: 1:2,000,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55



5.3 Regional Context

5.3.1 Regional Location, Key Regional Projects and Infrastructure

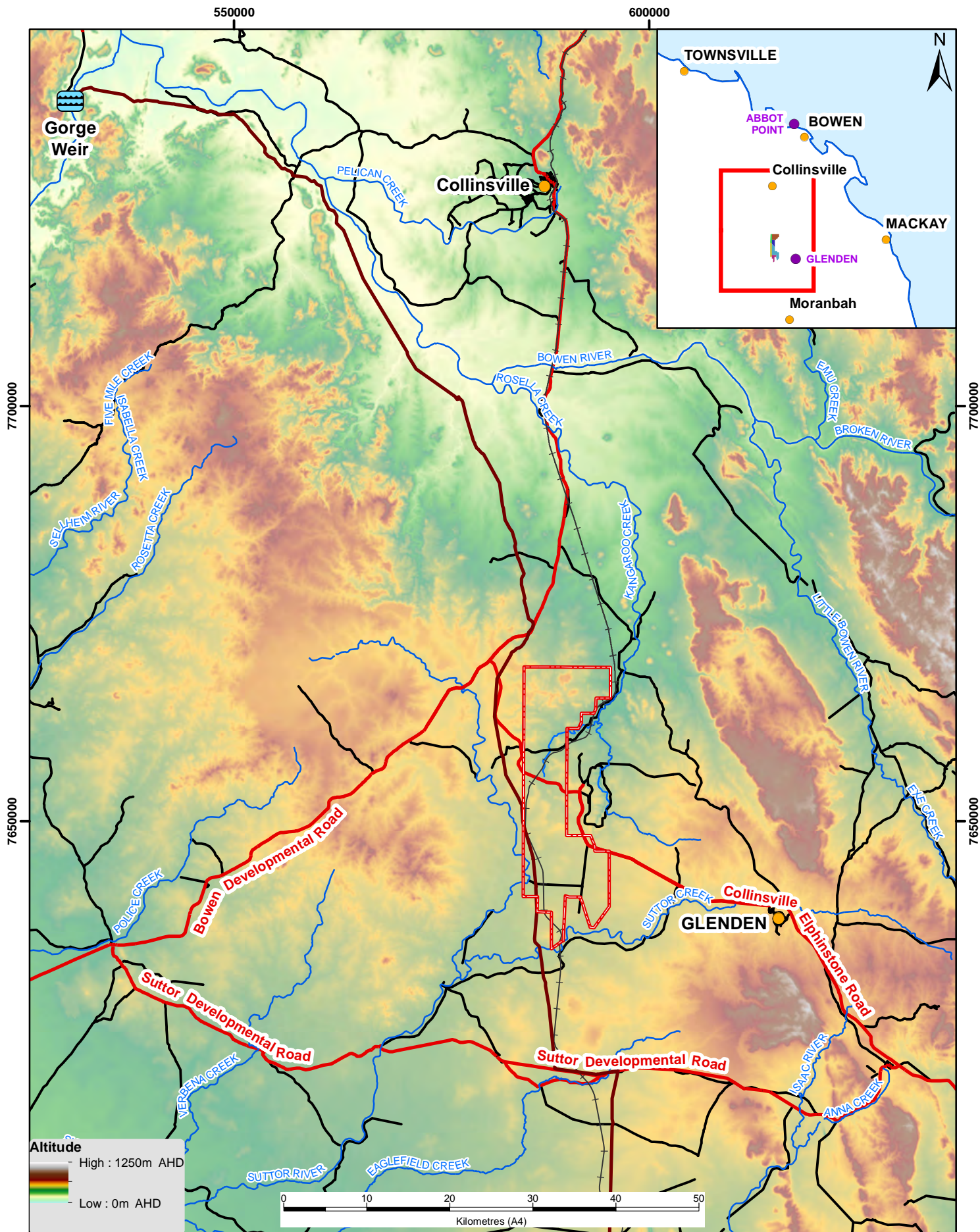
The project is located approximately 20 km west of Glenden, 60 km south of Collinsville, and approximately 140 km west of the regional centre of Mackay. The regional project location is shown in **Figure 5-2**. The project is located in two local government areas, Whitsunday Regional Council (WRC) in the north and Isaac Regional Council (IRC) in the south. A plan showing local government boundaries and the mining leases is shown in **Figure 5-3**. Within the regional context the following existing projects and infrastructure is of potential significance to the project.

The project area is immediately to the west of the Xstrata owned Newlands Mine and to the north of the Xstrata Wollombi and Suttor Creek mines.

The project tenements are traversed by the Collinsville-Elphinstone Road and the Goonyella to Abbot Point (GAP) rail line (refer **Figure 5-2**). Access to the project area will be via the existing Collinsville-Elphinstone Road which connects to the Bowen Developmental Road and Suttor Developmental Road. These are highways from either Bowen via Collinsville or from Mackay via Glenden and Nebo.

The project will develop two train loading facilities (TLFs) within the project area that connect to the GAP rail line. Coal will be railed to Abbot Point for export to international customers.

The proponent has commenced discussions with a third party water supplier (SunWater) for the sourcing and delivery of water for the project from a pipeline system that connects the project to the Burdekin water supply scheme at Gorge Weir and which traverses the western side of the project area (refer **Figure 5-2**).



Legend

- Project Area
- GAP Rail line
- Main Towns
- Highway
- Burdekin to Moranbah Pipeline
- Main Road
- Local Roads (formed & unformed)
- Watercourses

Local Area Topography



Figure 5-2

Byerwen Coal Project

Date: 24/01/2013

Author: samuel.ferguson

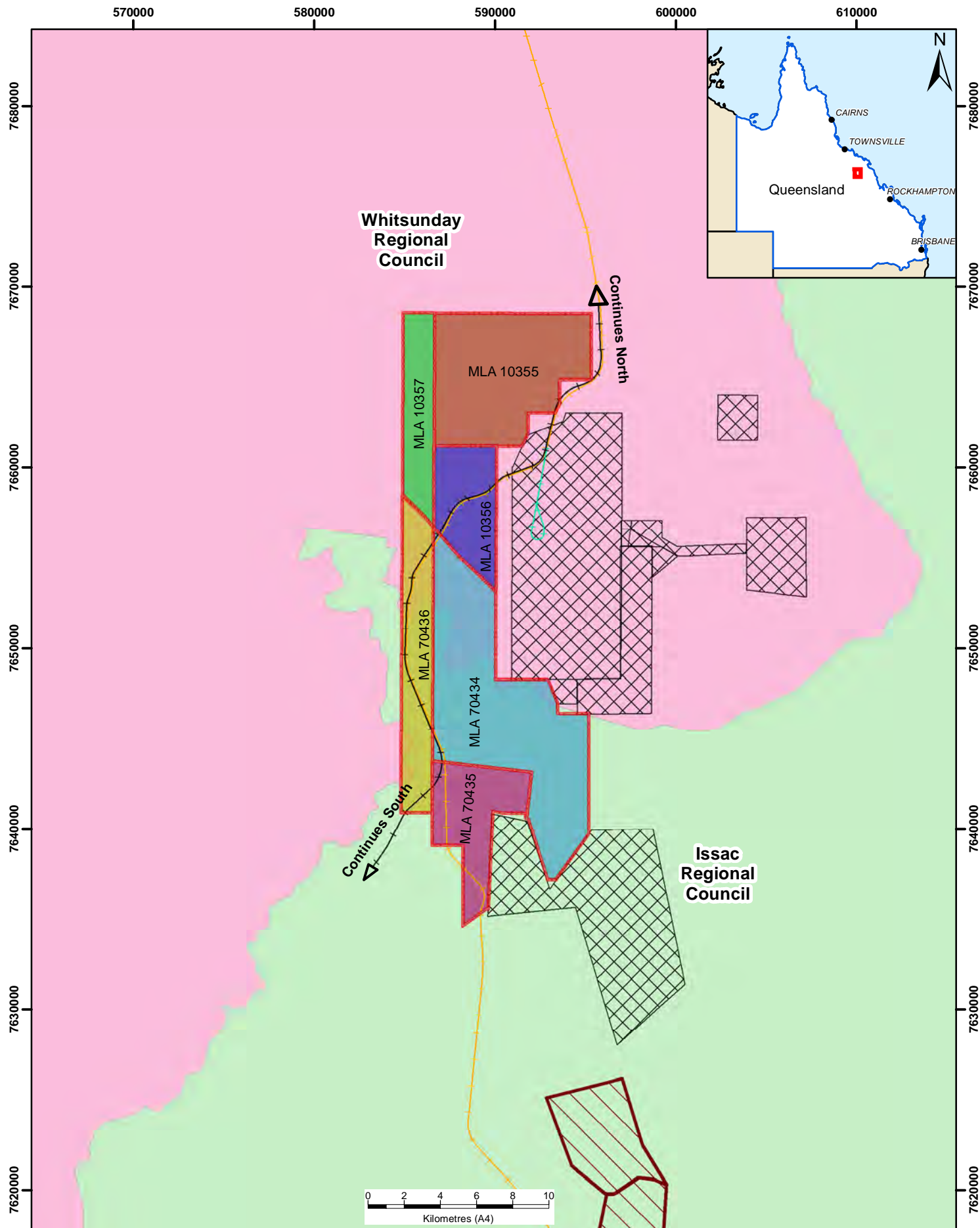
Map Scale: 1:600,000

Coordinate System: GDA 1994 MGA Zone 55

Revision: R1



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Legend

- | | | | |
|--|---|--|------------------------------|
| | Byerwen Project Mining Lease Boundaries | | Xstrata Granted MLs |
| | Issac Regional Council | | Alpha Coal Project Rail Line |
| | Whitsunday Regional Council | | GAP Rail line |
| | BHP Granted MLs | | Newlands Mine Rail Loop |

Mining Tenures and Local Government Boundaries		
Figure 5-3 Byerwen Coal Project		
Date: 25/01/2013	Author: samuel.ferguson	
Revision: R1	Map Scale: 1:275,000	
Coordinate System: GDA 1994 MGA Zone 55		
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5.3.2 Regional Council Areas

The WRC has a population of 35,500 people in an area of 23,871 km² (DLGP, 2012). The main regional centres in the WRC are situated along or near the coast and include Proserpine, Airlie Beach, Cannonvale and Bowen. The region has one of the fastest growing economies in Queensland. It has potential to experience significant growth in the future due to the growth in mining and industrial services and expansion of port facilities. The WRC is adjacent to the Great Barrier Reef (GBR). 99.7% of the region is classified as Regional Landscape and Rural Production Areas under the Mackay, Isaac, Whitsunday Regional Plan (2012) (DLGP, 2012). This encompasses areas of high biodiversity value, cultural value, agricultural land and extractive industries.

The IRC has a population of approximately 23,000 people in an area of 58,862 km (DLGP, 2012). The only major regional centre in the IRC is Moranbah with a population of 8,300. Glenden is a district regional centre and was established to service surrounding mines but now also services the surrounding rural population. The IRC contains a substantial portion of the Bowen Basin coal reserves. Coal mining is the major industry in the region and the largest employer. The Isaac region has extensive agricultural industries, particularly grazing and dryland grain cropping. The region has national parks, state forests and important wetlands with significant environmental value. 99.9% of the region is classified as Regional Landscape and Rural Production Areas (DLGP, 2012).

5.3.3 Regional Centres

The nearest town to the project is Glenden. Collinsville is also situated approximately 60 km to the north. The proponent's intention is to develop accommodation facilities in Glenden (further described in **Chapter 6** and **7**) for the construction and operational workforces. Hence Glenden is likely to experience the greatest impacts (both positive and negative) of any town in the region. Glenden was established by Xstrata PLC to provide accommodation for nearby coal mines, which adjoin the boundaries of the project. The population of Glenden is approximately 1,800.

Mackay is likely to act as the regional transit centre for workers commuting to Glenden and as a regional centre where some of the project workforce will reside. Mackay is located on the coast at the mouth of the Pioneer River and has a population of approximately 121,000.

5.4 Local Context

5.4.1 Mining Tenures

The project area comprises six mining lease application areas (MLAs), which were lodged on 29 and 30 June 2010, totalling approximately 22,697 hectares. Three of the MLAs are administered by the Charters Towers Regional Mining Registrar of the Department of Natural Resources and Mines (DNRM) MLAs 10355 (5,411 hectares), 10356 (2,203 hectares) and 10357 (1,898 hectares); and three of the MLAs are administered by the Emerald Regional Mining Registrar MLAs 70434 (7,731 hectares), 70435 (2,560 hectares) and 70436 (2,894 hectares). The proponent holds the two underlying exploration tenements in the project area, EPC 614 and EPC 739. The proposed project area covers a portion of the two underlying EPCs.

5.4.2 Project Area Boundary

The project area perimeter (the outer area of all joined mining lease boundaries) is described by the following latitude/longitude coordinates:

-21.081762, 147.81771; -21.081805, 147.917458; -21.115128, 147.917117; -21.115585, 147.900687; -21.129824, 147.899339; -21.131619, 147.884259; -21.14501, 147.882376; -21.148209, 147.867776;

-21.265032, 147.872036; -21.265313, 147.892679; -21.278032, 147.900947; -21.281738, 147.91428; -21.344104, 147.916224; -21.364982, 147.898252; -21.334246, 147.885117; -21.331777, 147.867894; -21.379707, 147.864124; -21.388477, 147.851147; -21.348349, 147.851108; -21.348363, 147.834447; -21.331773, 147.834396; -21.33179, 147.81775.

5.4.3 Overlapping Tenure

Overlapping tenure, including underlying tenements owned by Byerwen Coal Pty Ltd, within the project area for mining and petroleum leases are identified in **Figure 5-4**, **Figure 5-5** and **Figure 5-6**. Those that intersect the project area are listed below:

Table 5-1 Overlapping Tenure

Tenure Type	Tenure Number	Status	Granted	Principal holder
Exploration Permit Coal (EPC)				
EPC	614	Granted	16-Aug-96	Byerwen Coal Pty Ltd
EPC	739	Granted	25-Nov-09	Byerwen Coal Pty Ltd
Exploration Permit Minerals (EPM)				
EPM	18297	Granted	30-Jan-12	Navaho Gold limited
EPM	18336	Granted	6-Feb-12	Navaho Gold limited
EPM	18548	Granted	28-Sep-12	Byerwen Coal Pty Ltd
Mineral Development License (MDL)				
MDL	443	Granted	7-Dec-12	Byerwen Coal Pty Ltd
Exploration Permit Petroleum (EPP)				
EPP	742	Application	-	CH4 Pty Ltd
EPP	688	Granted	26-Feb-03	BNG (Surat) Pty Ltd
Petroleum Pipeline License (PPL)				
PPL (Gas)	89	Granted	6-Mar-03	North Queensland Pipeline No 1 Pty Ltd
Mining Lease (ML)				
ML (Transport)	70460	Application	-	Xstrata Coal Queensland Pty Ltd

5.4.4 Real Property Tenures

Table 5-2 identifies the tenure property type (leasehold, easement, intersection, road and water properties), regional council within or intersected by the project MLAs and details of the ownership of land. The cadastral boundaries of these properties are shown in **Figure 5-7**.

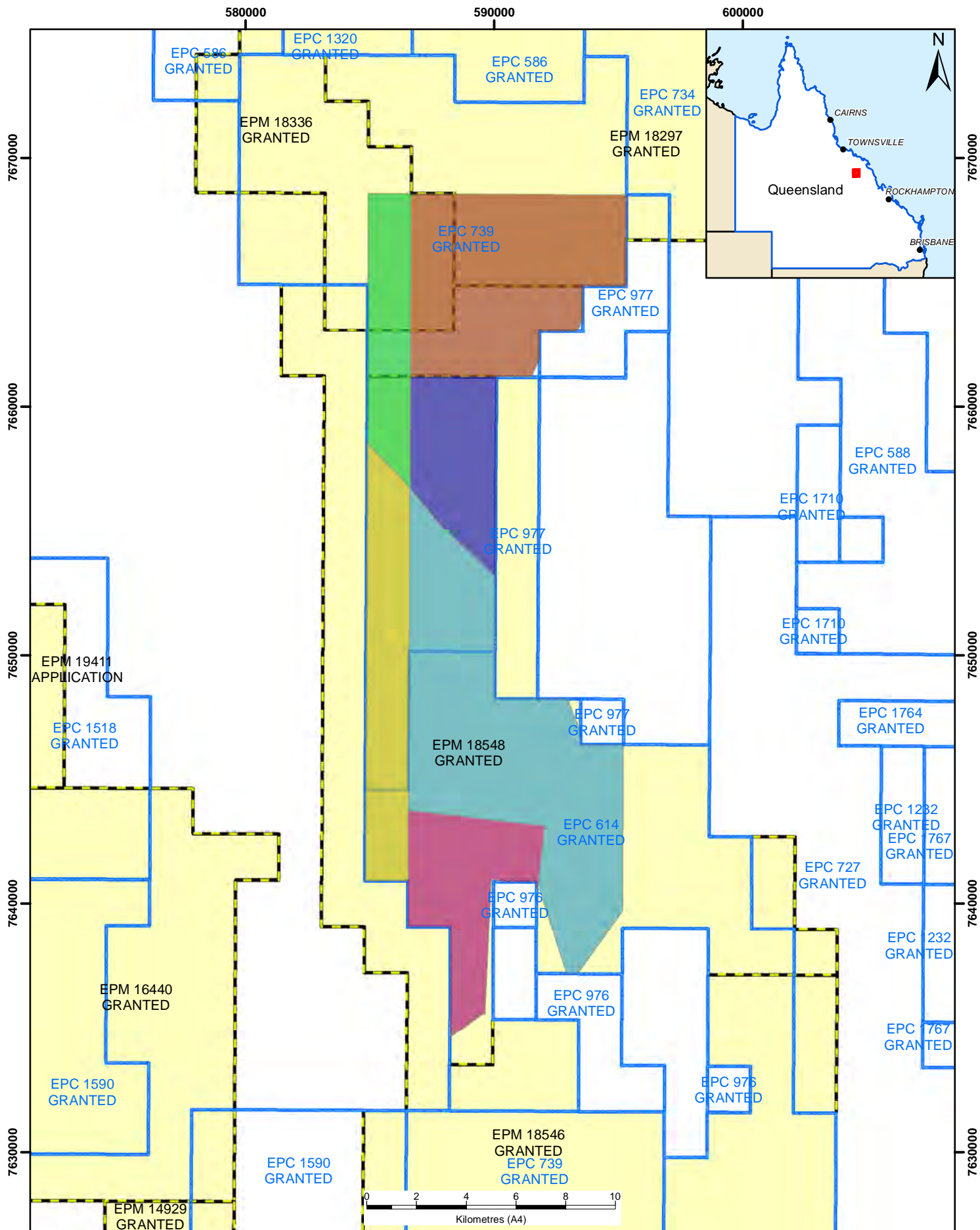
Table 5-2 Real Property Tenure – Byerwen Project

Lot	Plan	Tenure	Description	Shire Name	Parish
1	CP905226	Lands Lease	Tenure: Grazing Homestead Perpetual Lease (GHPL) 30/4120. Lessee: Private Individual - Chris Wallin	Isaac Regional	Emin

Lot	Plan	Tenure	Description	Shire Name	Parish
K	SP175265	Easement Access	Easement: Lots K and L on SP175265. Enertrade: Pipeline 1 (burdening the land), over Lot 1 on CP905226.	Isaac Regional	Emin
L	SP175265	Easement Access	Easement: Lots K and L on SP175265. Enertrade: Pipeline 2 (burdening the land), over Lot 1 on CP905226.	Isaac Regional	Emin
H	SP195383	Easement Access	Easement: H on SP195383. Sunwater: (burdening the land), over Lot 1 on CP905226	Isaac Regional	Emin
I	SP195383	Easement Access	Easement: I on SP195383. Sunwater: (burdening the land), over Lot 1 on CP905226.	Isaac Regional	Emin
3	SP171922	Lands Lease	Tenure: TL 0/235865 Lessee: Collinta Holdings. Pty. Ltd. A.C.N. 010 031 017	Whitsunday Regional	Byerwen
B	DK119	Easement Access	Easement: Lot B on DK119 - north-south running linear easement to the northeast corner of project area (holder unknown).	Whitsunday Regional	Sonoma
4	SP171921	Lands Lease	Tenure: GHPL 5/2123 Lessee: Private Individual	Whitsunday Regional	Corrievahn
14	SP225054	Lands Lease	Tenure: Term Lease (TL) 0/35642 Lessee: Collinta Holdings Pty. Ltd. A.C.N. 010 031 017.	Whitsunday Regional	Cerito
667	PH1321	Lands Lease	Tenure: Lands Lease (Mount Lookout Holding) Lessees: Private individuals. Tenure Reference Pastoral Holding (PH) 5/667.	Whitsunday Regional	Locharwood
682	CP906890	Lands Lease	Tenure: Lands Lease (Suttor Creek Holding). Lessees: Private individuals. Tenure Reference TL 0/235783.	Isaac Regional	Emin
689	SP251696	Lands Lease	Tenure: Lands Lease Lessee: Leichhardt Pastoral Pty. Ltd. A.C.N. 150 209 975. Tenure Reference TL 0/235359.	Isaac Regional	Cerito
J	SP195384	Easement Access	Easement: Lot J on SP195384. Sunwater A.B.N. 17 020 276 523, (burdening the land).	Isaac Regional	Cerito

Lot	Plan	Tenure	Description	Shire Name	Parish
M	SP175266	Easement Access	Easement: Lot M on SP175266. Enertrade (NQ) Pipeline No 1 Pty Ltd A.C.N. 100 946 281, (burdening the land). Easement: Lot M on SP175266. Enertrade (NQ) Pipeline No 2 Pty Ltd A.C.N. 100 946 263, (burdening the land).	Isaac Regional	Cerito
A	AP11665	Lands Lease	Tenure: Lands Lease Permittee: Enertrade (NQ) Pipeline No 1 Pty. Ltd. A.C.N. 100 946 281. Enertrade (NQ) Pipeline No 2 Pty. Ltd. A.C.N. 100 946 263. Tenure Reference Permit to Occupy (PO) 0/231117.	Isaac Regional	Emin
M	AP19624	Lands Lease	Tenure: Lands Lease Permittee: Sunwater A.C.N. 131 034 985 Tenure Reference PO 0/233789	Isaac Regional	Emin
		Wollombi Road	Road Reserve. Formed Road.	Isaac Regional	Mt Britton
		Wollombi Road	Road Reserve. Formed Road.	Isaac Regional	Mt Britton
		Wollombi Road x Road	Intersection	Isaac Regional	Tiverton
		Wollombi Road x Collinsville-Elphinstone Road	Intersection	Isaac Regional	Haverholm
		Road	Unformed Road	Isaac Regional	Tiverton
		Collinsville-Elphinstone Road	Road Reserve. Formed Road.	Isaac Regional	Haverholm
		Road Collinsville-Elphinstone Road	Road Reserve. Formed Road.	Whitsunday Regional	Locharwood
		Road Collinsville-Elphinstone Road	Road Reserve. Formed Road.	Whitsunday Regional	Cerito
		Cerito Road	Unformed Road	Whitsunday Regional	Cutala
		Road	Unformed Road	Whitsunday Regional	Cerito

Lot	Plan	Tenure	Description	Shire Name	Parish
		Road	Unformed Road	Whitsunday Regional	Cutala
		Road	Unformed Road	Whitsunday Regional	Verbena
		Road	Unformed Road	Whitsunday Regional	Locharwood
		Road	Unformed Road	Whitsunday Regional	Locharwood
		Suttor River	Water (Suttor River)	Isaac Regional	Tiverton
		Suttor River	Water (Suttor River)	Whitsunday Regional	Locharwood
		Suttor River	Water (Suttor River)	Whitsunday Regional	Verbena



Legend

MLA 10355	MLA 70434	EPC
MLA 10356	MLA 70435	EPM
MLA 10357	MLA 70436	

Overlapping Tenure (EPC, EPM)

Figure 5-4

Byerwen Coal Project

Date: 21/01/2013

Author: shahram.nasiri

Map Scale: 1:200,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55



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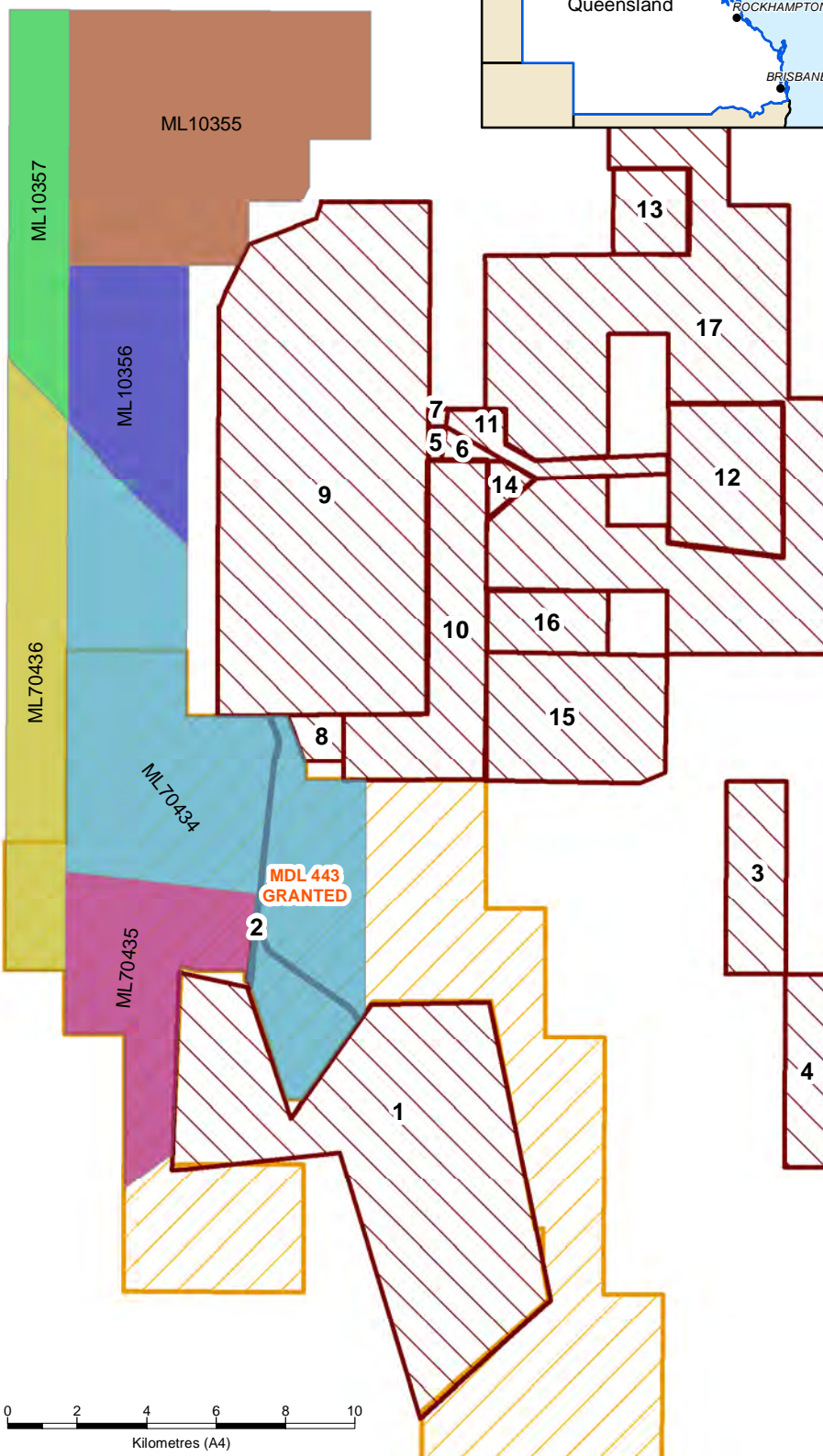
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1	ML 4761	GRANTED	SUTTOR CREEK
2	ML 70460	APPLICATION	SUTTOR CREEK TRANSPORT
3	ML 70472	APPLICATION	SUTTOR CREEK EAST NO.1
4	ML 70473	APPLICATION	SUTTOR CREEK EAST NO.2
5	ML 10316	GRANTED	NORTHERN UNDERGROUND 1
6	ML 10317	GRANTED	NORTHERN UNDERGROUND 2
7	ML 10176	GRANTED	EASTERN CREEK HAUL ROAD
8	ML 4771	GRANTED	NEWLANDS SOUTH
9	ML 4748	GRANTED	NEWLANDS
10	ML 4774	GRANTED	NEWLANDS EAST
11	ML 10322	GRANTED	NORTHERN UNDERGROUND 3 (NUG)
12	ML 4755	GRANTED	EASTERN CREEK SOUTH
13	ML 4754	GRANTED	EASTERN CREEK NORTH
14	ML 10348	GRANTED	NUG EXTENSION
15	ML 10362	APPLICATION	NUG EXTENDED 2
16	ML 10361	APPLICATION	NUG EXTENDED 1
17	ML 10352	APPLICATION	EASTERN CREEK EXTENDED



Legend

	MLA 10355		MLA 70434		MDL
	MLA 10356		MLA 70435		ML
	MLA 10357		MLA 70436		

Overlapping Tenure (ML, MDL)

Figure 5-5

Byerwen Coal
Project

Date: 24/01/2013

Author: samuel.ferguson

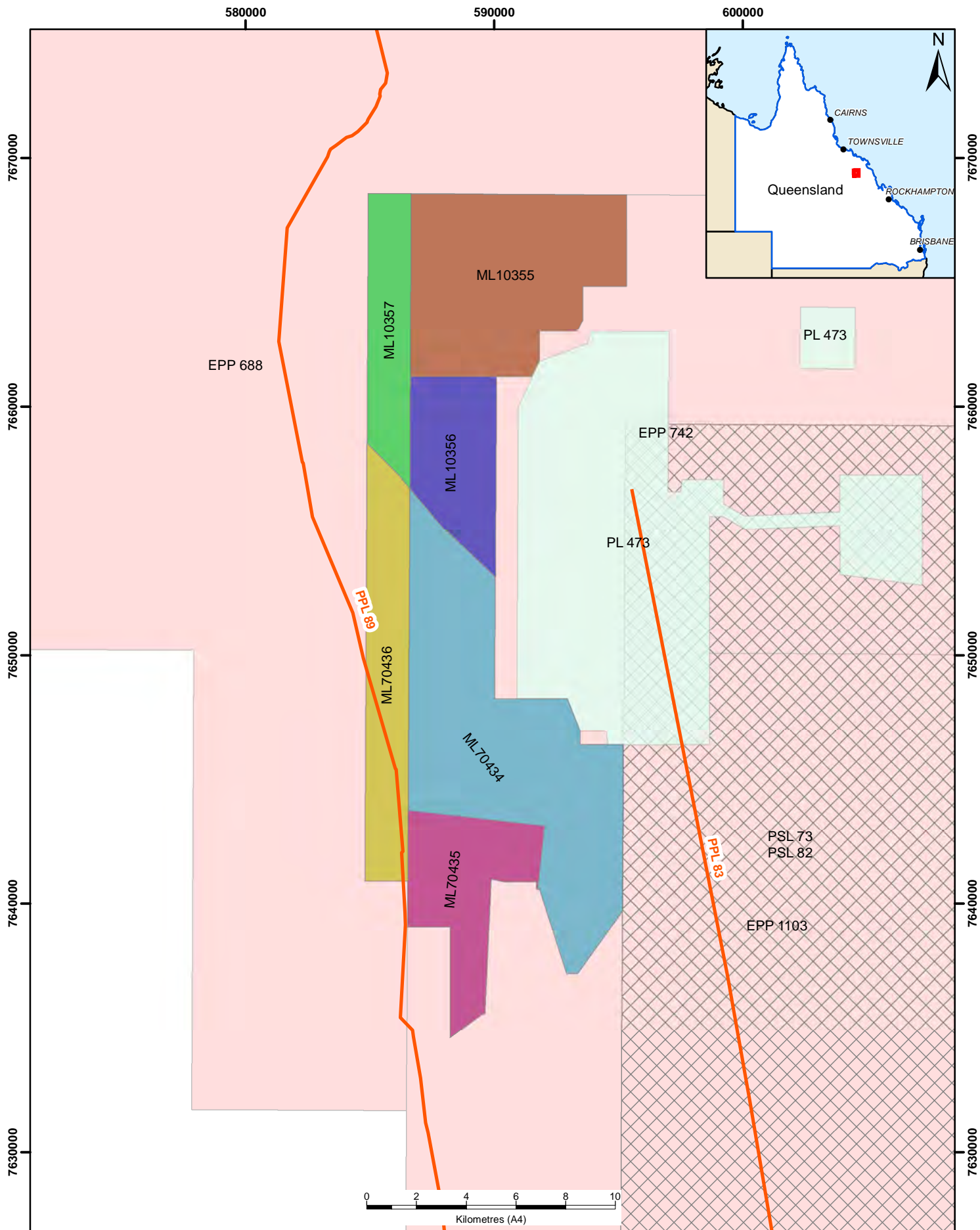
Map Scale: 1:200,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55

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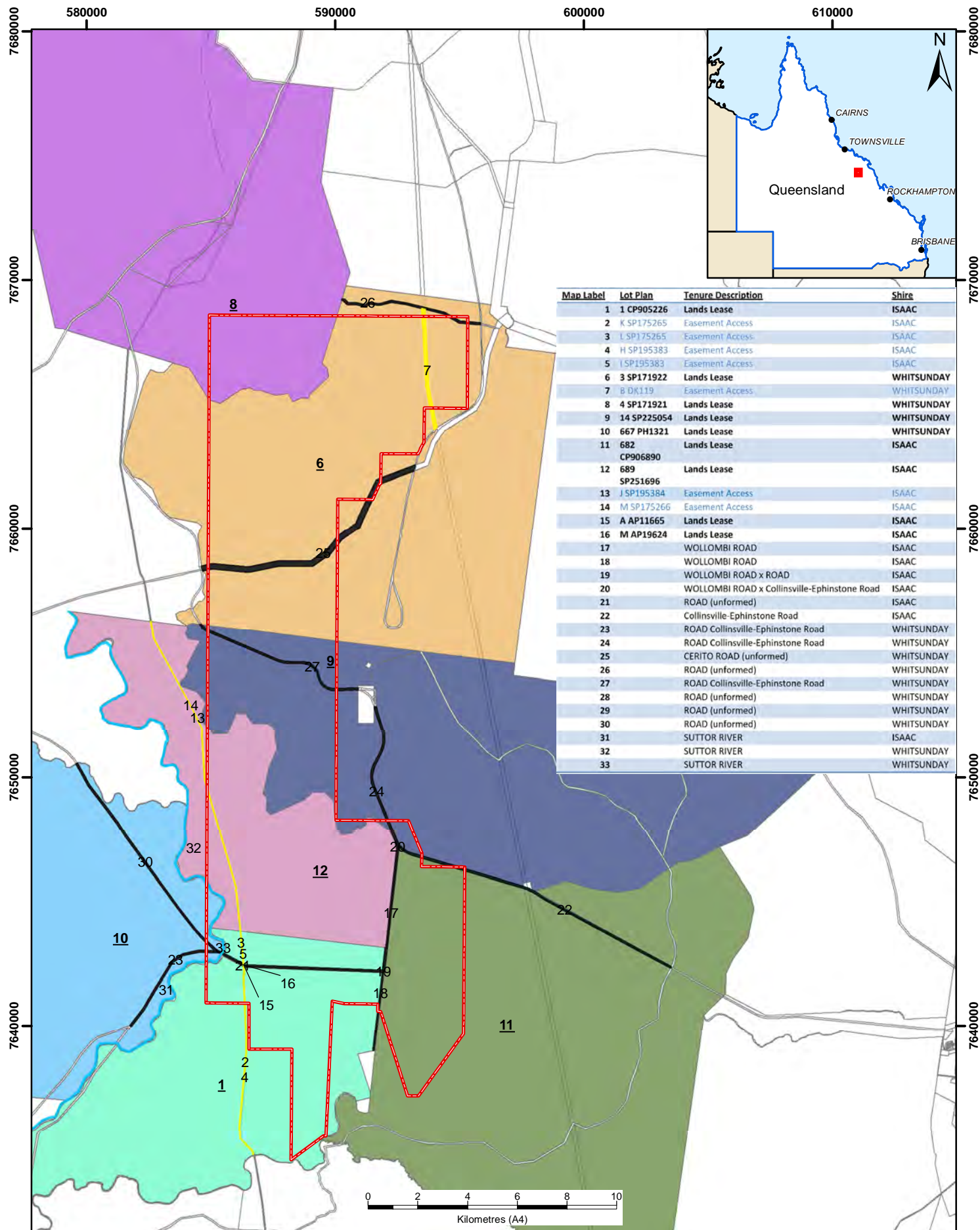




Legend

	MLA 10355		MLA 70434		PPL		PSL
	MLA 10356		MLA 70435		PL		EPP
	MLA 10357		MLA 70436				

Overlapping Tenure [PPL, PL, PSL, EPP (ATP)]		
Figure 5-6	Byerwen Coal Project	
Date: 24/01/2013	Author: samuel.ferguson	
Revision: R1	Map Scale: 1:200,000	
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Legend

- Project Area
- Road
- Water
- Easement

Lands Lease

- 14SP225054
- 1CP905226
- 3SP171922
- 4SP171921
- 667PH1321
- 682CP906890
- 689SP251696

Underlying Real Property and Cadastre

Figure 5-7

Byerwen Coal Project

Date: 24/01/2013

Author: samuel.ferguson

Map Scale: 1:200,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55

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5.5 Project Area Layout and Third Party Infrastructure

5.5.1 Mine Phases, Areas, Zones and Pit Locations

The project is separated into a south phase and north phase. The south phase comprises open cut mining over the life of the project in the southern tenement areas (ML 70435, ML 70434 and ML 70436). The north phase comprises open cut mining in the northern tenement areas (ML 10355, ML 10356 and ML 10357).

Four mining zones have been identified for the project, comprising eight open pits.

The tenement area in which the zones are located and the pits within in each zone are described in **Table 5-3**.

Table 5-3 Mining Zone and Pits

Tenement area	Zone	Open Pit
Southern	South	South Pit 1
		South Pit 2
	East	East Pit 1
		East Pit 2
	West	West Pit 1
		West Pit 2
		West Pit 3
Northern	North	North Pit

Within the context of the local area, a sequential progress plot showing the mine layout over time is shown in **Figure 5-8** and includes:

- the full extent of open pits
- southern and northern train loading facilities (TLFs), comprising rail spurs connected to the GAP rail line, rail loop and train loading bin
- central infrastructure corridor (water, power and road)
- southern infrastructure corridor (power, drainage and rail between WP1 and SP1).

The central infrastructure corridor will be used for the transfer of mining equipment between the various pits in the project so as to limit impacts on public roads. It will connect the southern coal handling and preparation plant (CHPP) and mine infrastructure areas (MIA) to the northern CHPP and MIA and contain:

- road for light and heavy mine site vehicles
- power lines
- raw water supply pipeline
- communications.

The southern infrastructure corridor will connect the southern CHPP to the GAP railway and will contain:

- southern rail line
- drainage diversions to divert water flowing between West Pit 1 and South Pit 1
- raw water supply pipeline connected to the SunWater pipeline system
- power line diversion.

The final landform footprint showing the rehabilitated waste rock dumps, final voids and infrastructure required over mine life (which will be decommissioned and rehabilitated) is shown in **Figure 5-9**.

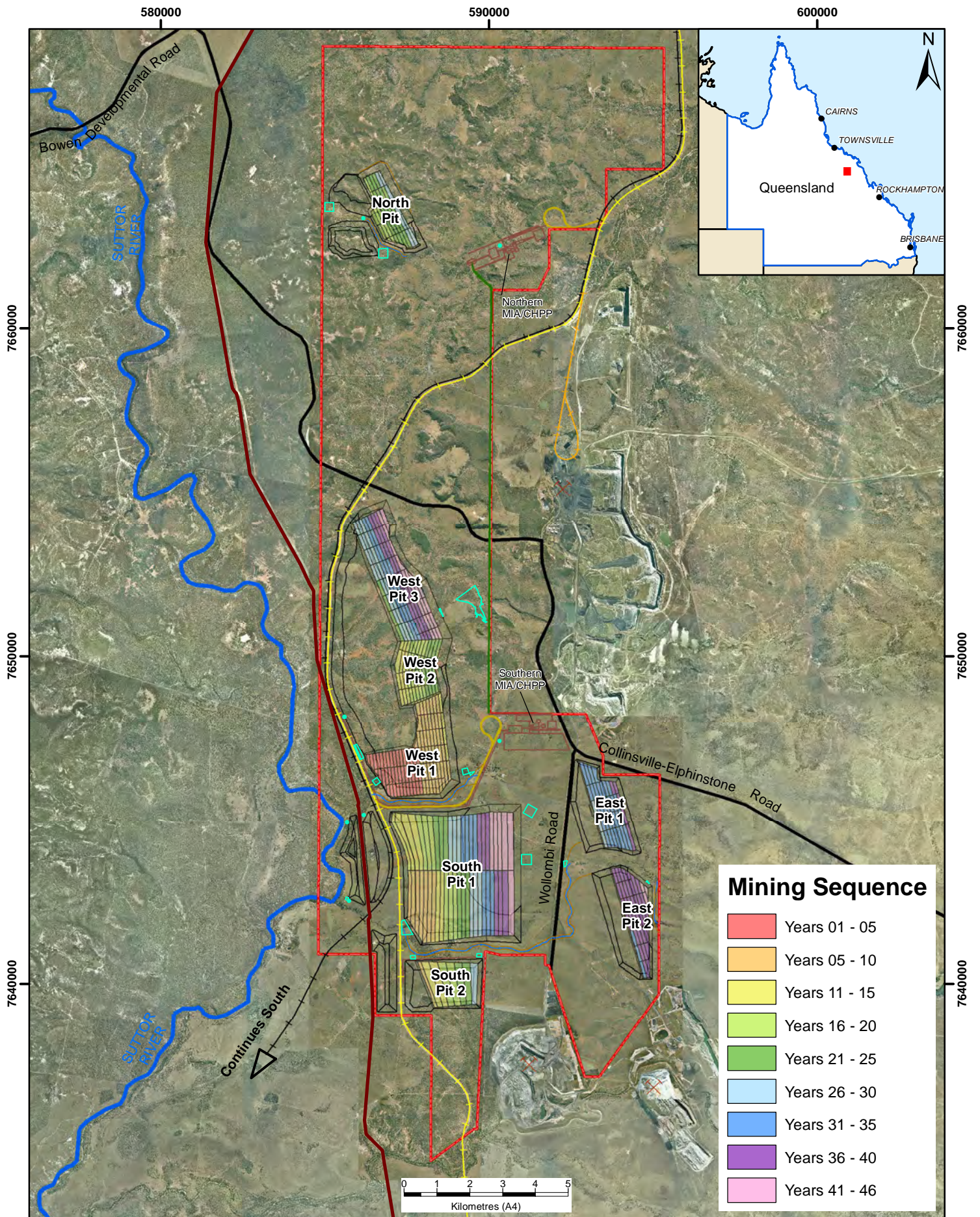
South MIA and TLF are shown in **Figure 5-10** and rail spur connection with the GAP rail line is shown in **Figure 5-11**. The North MIA and TLF are shown in **Figure 5-12**, including rail spur connection with the GAP rail line. These figures show the following:

- southern and northern CHPPs.
- southern and northern MIAs
- southern and northern ROM coal stockpile pads
- southern and northern product coal stockpile pads
- southern and northern co-disposal dams, raw water dams and environmental control dams

5.5.2 Buffers

A number of buffers have been established within the project area as follows:

- 100 m buffers from the toe of waste rock dumps dump slopes to the edge of the GAP rail easement
- 75 m buffers from the toe of out of pit South Pit waste rock dump slopes to the centerline of the Sunwater Burdekin to Moranbah pipeline
- 150-500 m buffers from the toe of the out of pit South Pit waste rock dump slopes to the Suttor River (with a minimum 5 m height elevation from the river bank to the slope toe)
- engineering and environmental buffers allowing for drainage line and creek diversions, power diversions, as well as road and rail infrastructure placement between what would otherwise be continuous open pit excavations and waste rock dumps at the following locations:
 - between the North Pit waste rock dump areas
 - between West Pit 1 and South Pit 1 (400 m wide southern infrastructure corridor)
 - between South Pit 1 and South Pit 2 (500 m creek diversion and power diversion)
 - between East Pit 1 and East Pit 2 (400 m corridor for natural drainage)
- engineering and environmental buffers between mine areas and waste rock dump areas and the ML boundaries to allow for drainage line and creek diversions and to ensure engineering works do not encroach onto off-site areas as follows;
 - between East Pit 2 and the ML boundary (200 m drainage diversion)
 - between North Pit and the ML boundary (200 m engineering buffer)
 - between East Pit 1 and the ML boundary (50 m engineering buffer)
 - between South Pit 2 and the ML boundary (50 m engineering buffer).



Legend

- | | | |
|-------------------------------|---|---------------------|
| Project Area | Newlands Mine Rail Loop | Sutor River |
| Waste Rock Dumps and Pits | Alpha Coal Project Rail Line | Drainage Bund |
| Burdekin to Moranbah Pipeline | Train Loading Facilities | Drainage Diversion |
| Existing Mine Site | Central Infrastructure Corridor | Formed Road |
| GAP Rail line | Dam (mine affected, sediment affected, clean water) | Mine Infrastructure |

Sequential Progress Plot

Figure 5-8

Byerwen Coal Project

Date: 28/02/2013

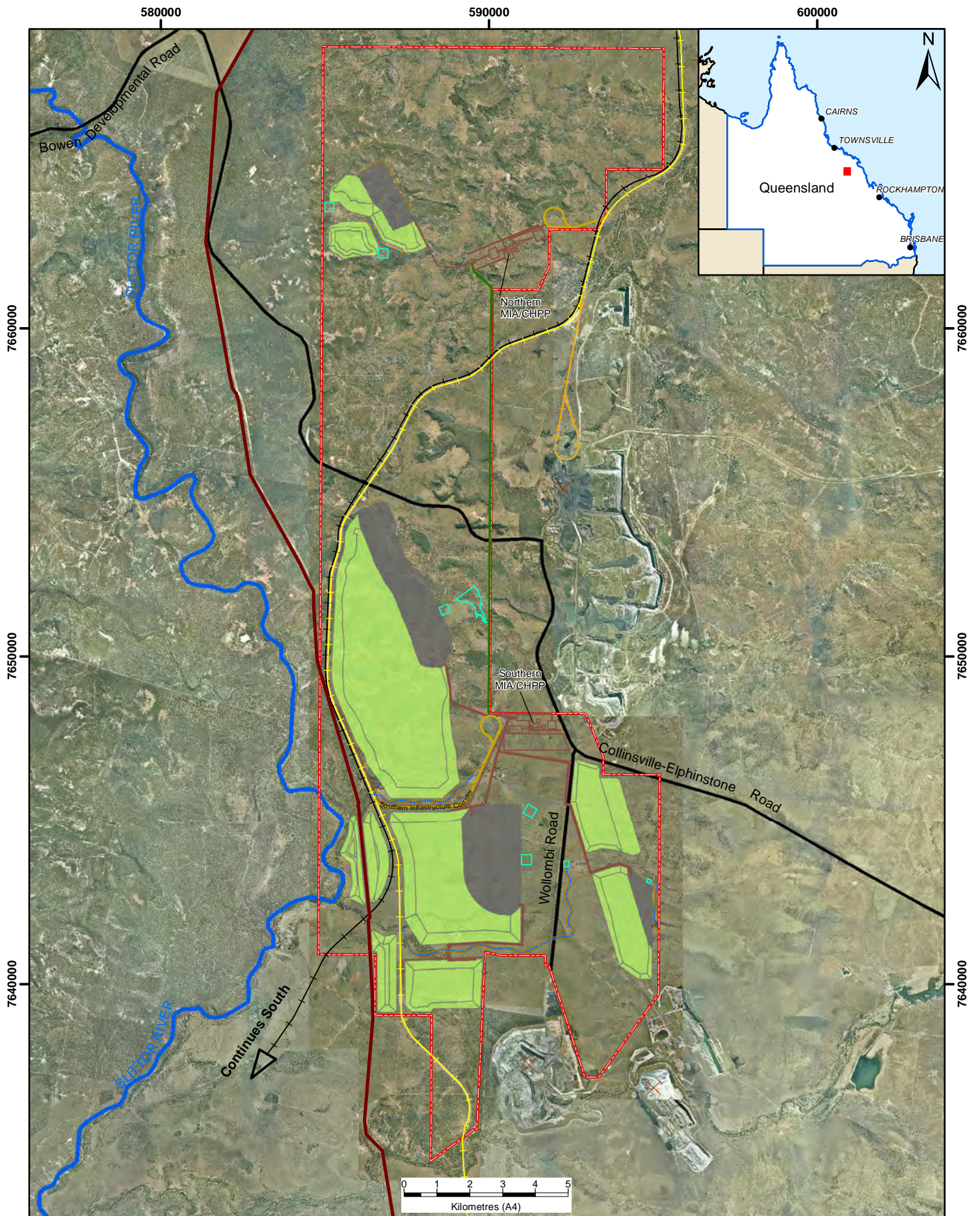
Author: samuel.ferguson

Revision: R1

Map Scale: 1:150,000

Coordinate System: GDA 1994 MGA Zone 55





Legend

- | | | |
|---|---|--|
| Project Area | Burdekin to Moranbah Pipeline | Suttor River |
| Completed Rehab | GAP Rail line | Drainage Bund |
| Final Void | Newlands Mine Rail Loop | Drainage Diversion |
| X Existing Mine Site | Alpha Coal Project Rail Line | Formed Road |
| | Mine Infrastructure | Dam (mine affected, sediment affected, clean water) |
| | Train Loading Facilities | Central Infrastructure Corridor |

Final Landform

Figure 5-9

Byerwen Coal Project

Date: 28/02/2013

Author: samuel.ferguson

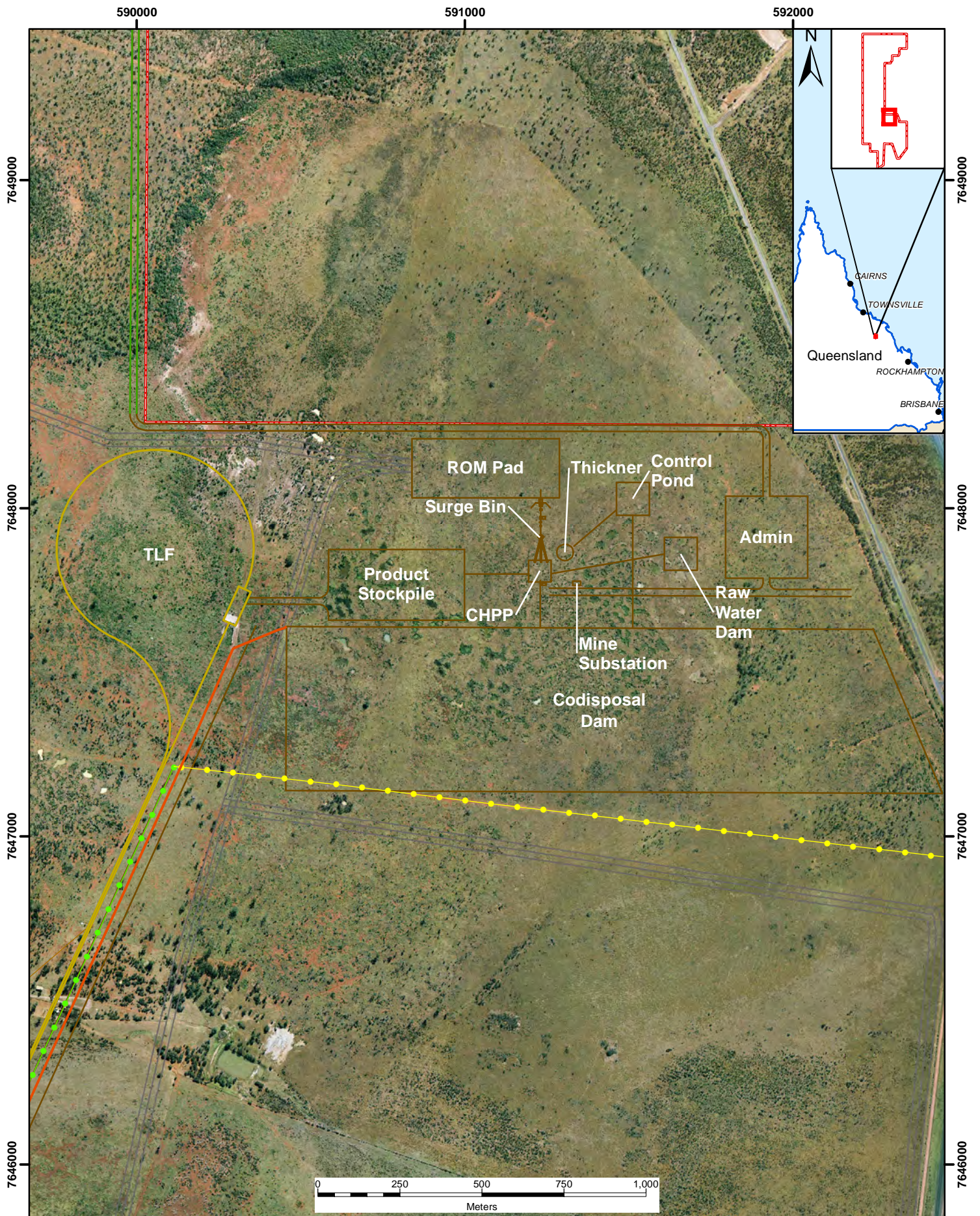
Map Scale: 1:150,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55



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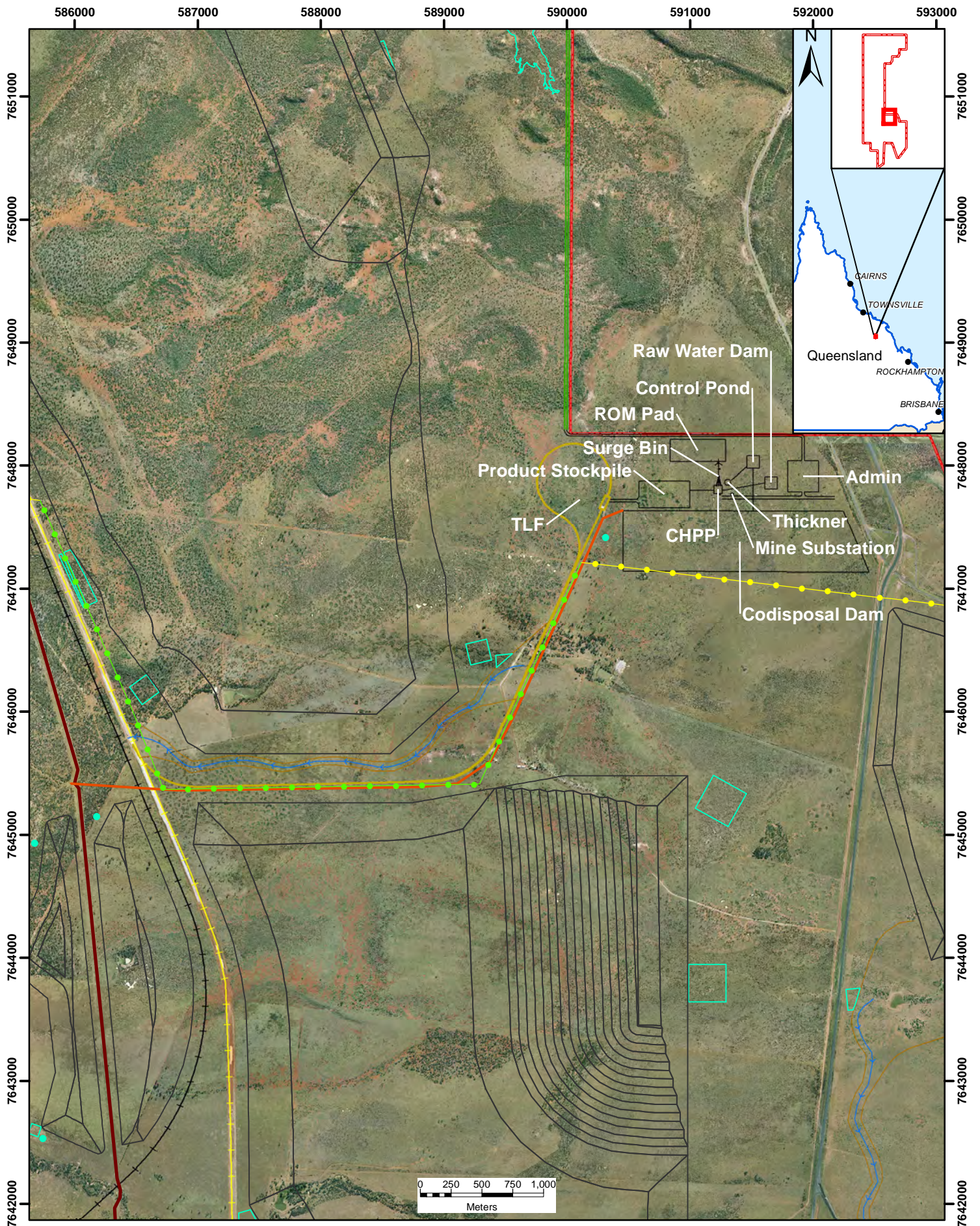


Legend

- Project Area
- Train Loading Facilities
- Central Infrastructure Corridor
- Mine Infrastructure
- Powerline
- Powerline Diversion
- Raw Water Pipeline

South MIA and TLF		 
Figure 5-10	Byerwen Coal Project	
Date: 25/01/2013	Author: samuel.ferguson	
Revision: R1	Map Scale: 1:15,000	
G:\CLIENTS\A-TO-D\BYEWEN - Byerwen EIS\GIS\Map\GIS Chapters\EIS_Chpt_5_Proj_Location\BYEWEN_MIA_South1.mxd		Coordinate System: GDA 1994 MGA Zone 55

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Legend

 Project Area	 Drainage Bund	 Central Infrastructure Corridor
 Waste Rock Dump and Pits	 Drainage Diversion	 Alpha Coal Project Rail Line
 Dam (mine affected, sediment affected, clean water)	 GAP Rail line	 Powerline
 Burdekin to Moranbah Pipeline	 Train Loading Facilities	 Powerline Diversion
	 Mine Infrastructure	 Raw Water Pipeline

South Rail Spur



Figure 5-11

Byerwen Coal Project

Date: 25/01/2013

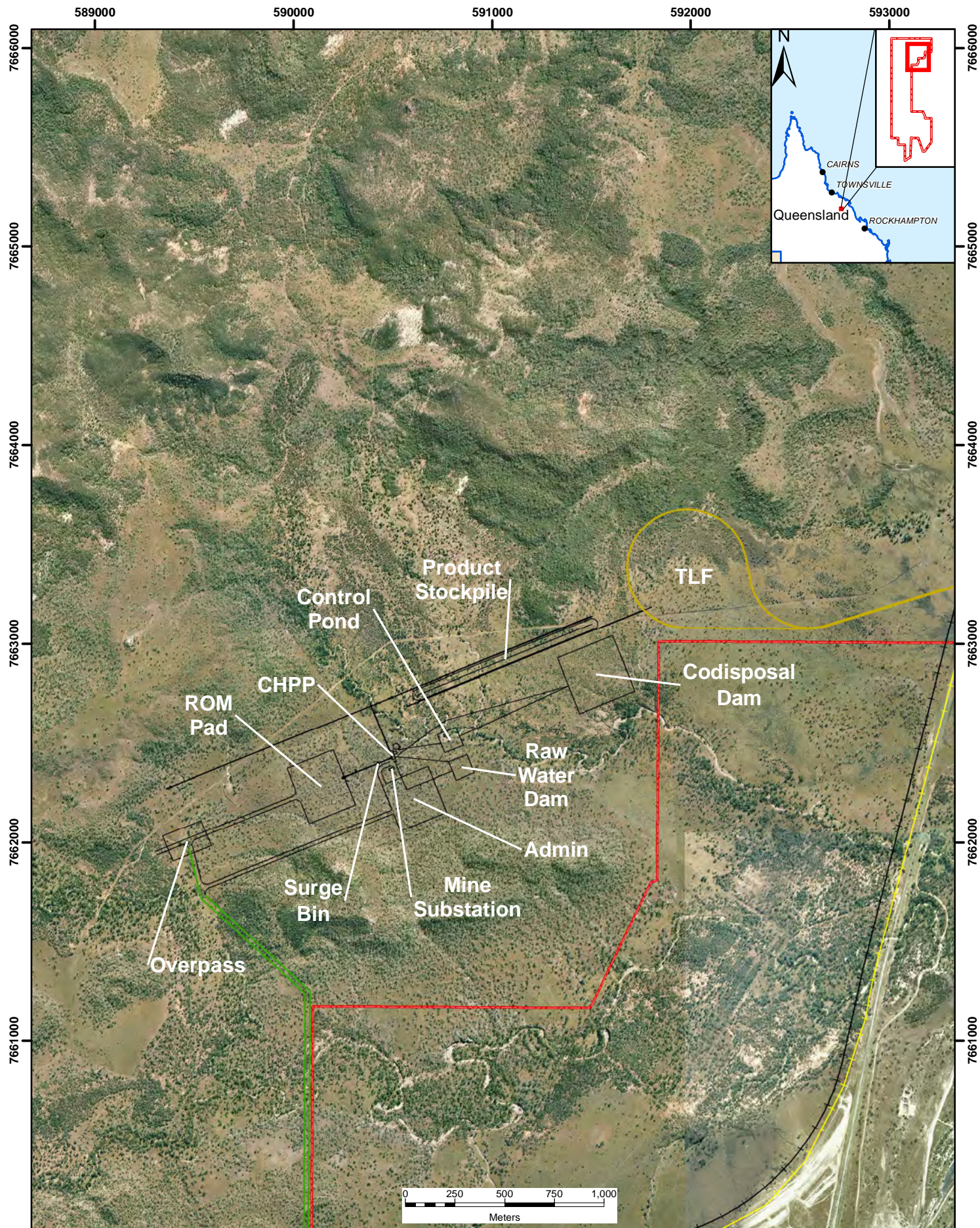
Author: samuel.ferguson

Revision: R1

Map Scale: 1:40,000

Coordinate System: GDA 1994 MGA Zone 55





Legend

- Project Area
- Mine Infrastructure
- Central Infrastructure Corridor
- GAP Rail line
- Alpha Coal Project Rail Line
- Train Loading Facilities

North MIA and TLF

Figure 5-12

Byerwen Coal Project

Date: 28/02/2013

Author: samuel.ferguson

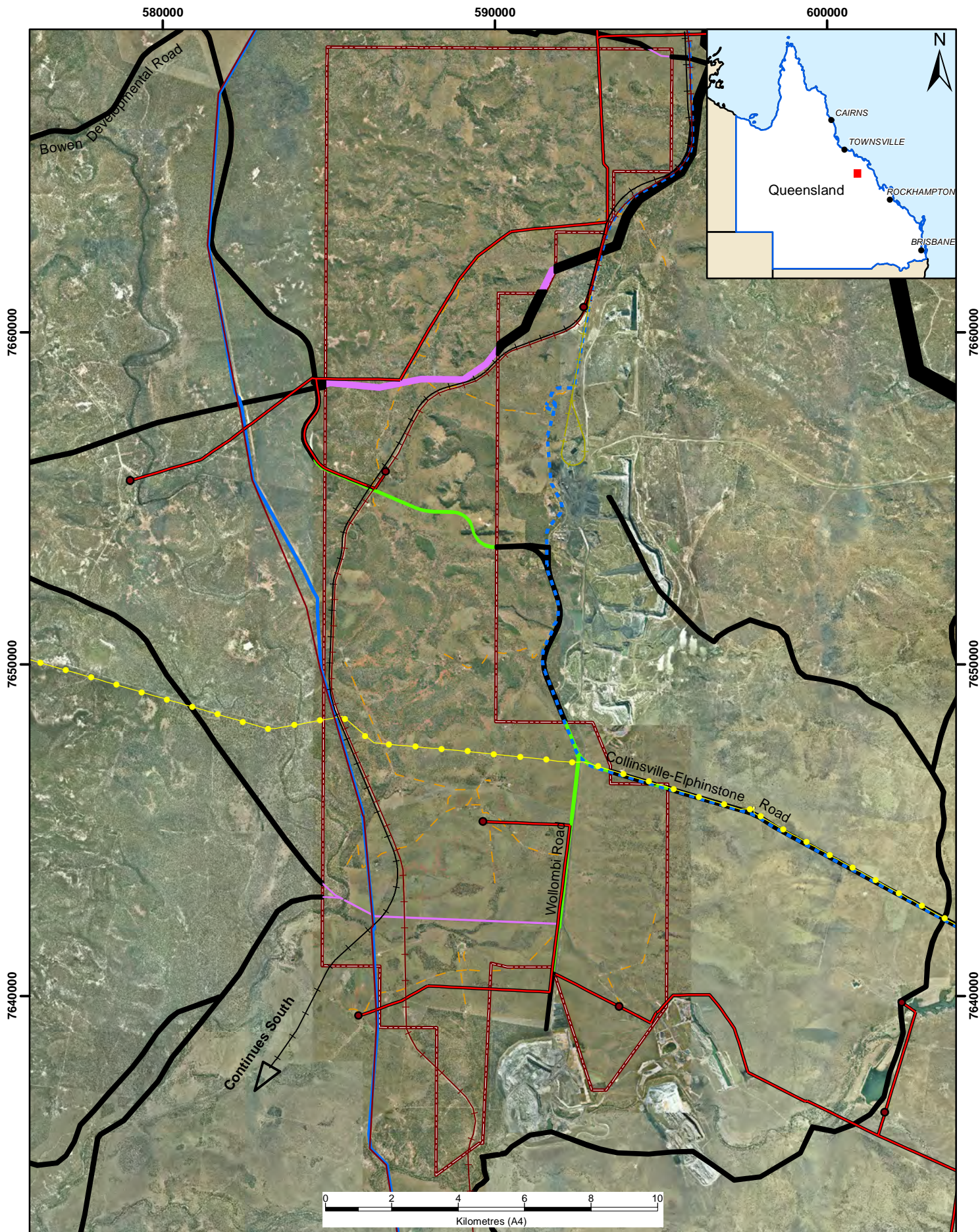
Map Scale: 1:25,000

Revision: R1

Coordinate System: GDA 1994 MGA Zone 55

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Legend

- Project Area
- GAP Rail line
- Newlands Mine Rail Loop
- Alpha Coal Project Rail Line
- North Queensland Gas Pipeline
- Tracks
- Newlands Pipeline (water)
- Burdekin to Moranbah Pipeline

Roads

- Formed Roads (Inside Project Area)
- Unformed Gazetted Roads (Inside Project Area)
- Gazetted Roads (Outside Project Area)

Power

- Power Distribution Substation
- High Voltage (Overhead)
- High Voltage (Underground)
- Sub-transmission (Overhead 66kv)
- Sub-transmission (Underground)

Third Party Infrastructure and Roads

Figure 5-13

Byerwen Coal Project

Date: 30/01/2013

Author: samuel.ferguson

Revision: R1

Map Scale: 1:150,000

Coordinate System: GDA 1994 MGA Zone 55



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5.5.3 Off Tenement Infrastructure

The only off tenement infrastructure that will be constructed for the project is accommodation in Glenden. This will be the subject of a separate approvals process for development approval under the *Sustainable Planning Act 2009*. Nevertheless, social and economic impacts associated with accommodation in Glenden and transport of workers to and from Glenden are assessed in this EIS.

5.5.4 Third Party Infrastructure, Rail and Roads

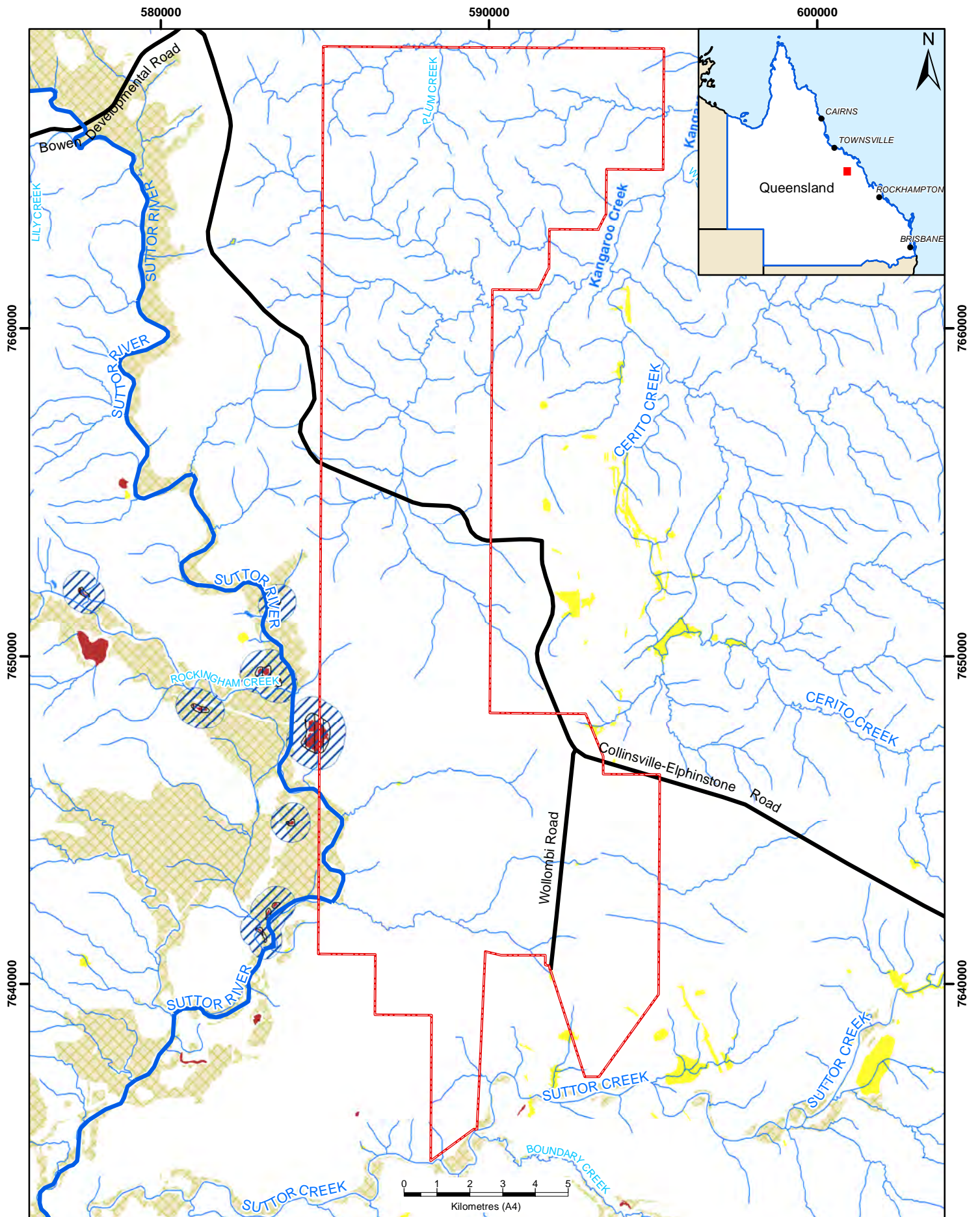
Third party infrastructure within the project area includes:

- GAP rail line, which will connect to the project's TLFs
- Proposed Alpha Coal Project rail line
- SunWater Burdekin to Moranbah water supply pipeline system, which will connect to project raw water supply pipelines
- Newlands mine water supply pipeline
- Electricity transmission lines, with the 66 KV line to connect to project substations
- North Queensland gas pipeline
- State controlled Collinsville-Elphinstone Road - the primary access route to the site
- Local public roads (formed and unformed).

Figure 5-8 and **Figure 5-13** show the location of third party infrastructure. Connections to some of this third party infrastructure are necessary for the operations of the project. The potential interaction between third party infrastructure and project infrastructure is described in **Chapters 6** and **7**.

5.5.5 Natural Features

This EIS describes natural and ecological features, Environmentally Sensitive Areas (ESA's), wetlands and stock routes within the project area in detail in the specialist impact assessment chapters. An overview of wetlands, natural features and stock routes is provided in **Figure 5-14** and **Figure 5-15** respectively.



Legend

 Project Area	Water Bodies	Areas that may include wetlands
 Sutor River	 Riverine	 Remnant regional ecosystem 1-50% wetland (mosaic units)
 Formed Roads	 Lacustrine	Great Barrier Reef Wetland Protection Area
 Riverine System (Drainage Lines)	 Palustrine	 Wetland
		 Trigger Area

Wetlands

Figure 5-14

Byerwen Coal Project

Date: 23/04/2013

Author: samuel.ferguson

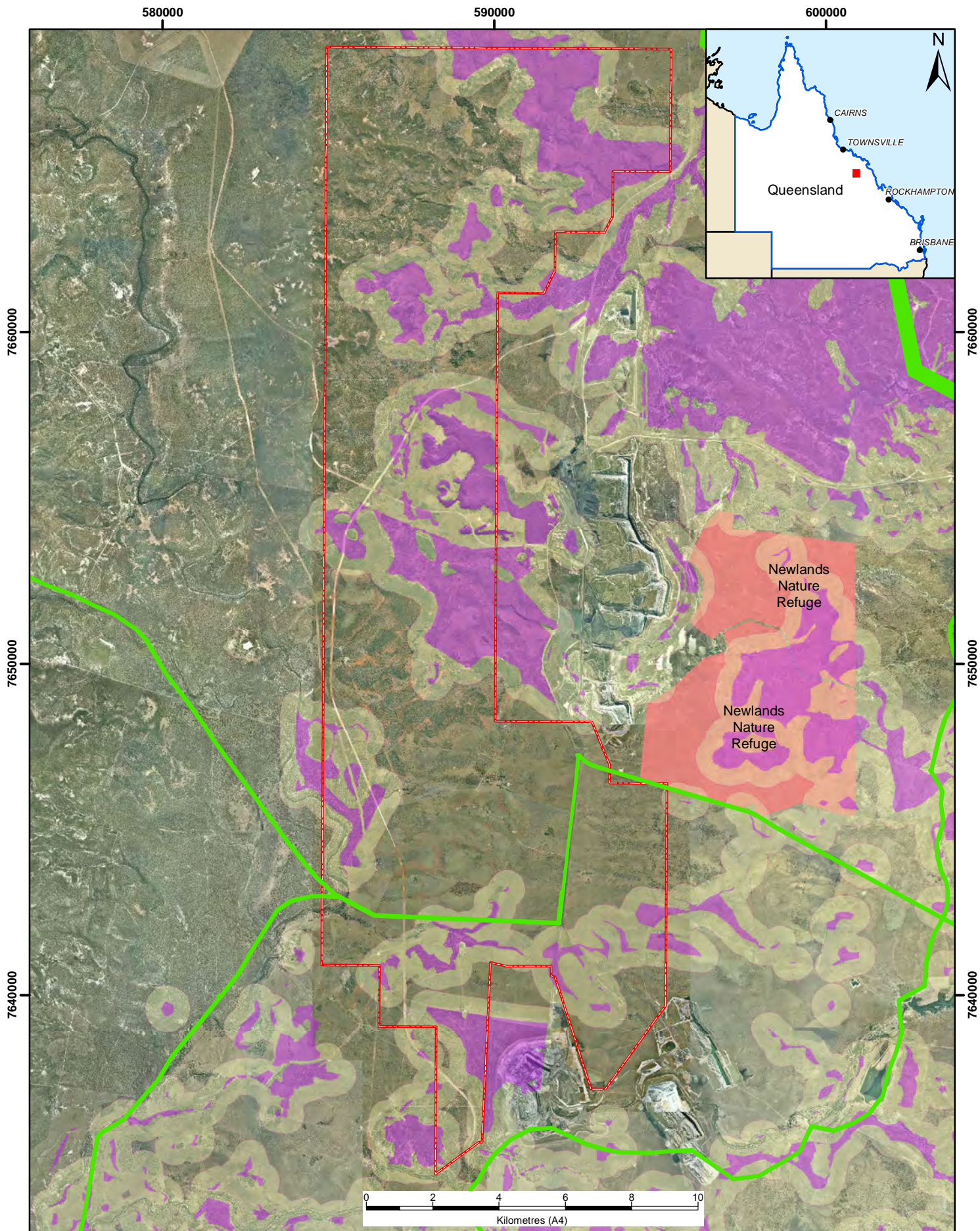
Revision: R1

Map Scale: 1:150,000

Coordinate System: GDA 1994 MGA Zone 55

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Legend

 Project Area

ESA CATEGORY B

 Endangered Regional Ecosystems (Biodiversity Status)

 Category B Buffer (500m)

ESA CATEGORY C

 Nature Refuges

Stock Route Category

 Unused/Inactive

Natural Features and Stock Routes



Figure 5-15

Byerwen Coal Project



Date: 23/01/2013

Author: Shaham Nasiri

Revision: R1

Map Scale: 1:150,000

Coordinate System: GDA 1994 MGA Zone 55

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