WILPINJONG COAL PROJECT

MAIN REPORT

Executive Summary

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ES1 INTRODUCTION

This Environmental Impact Statement (EIS) assesses the proposed development of the Wilpinjong Coal Project (the Project). The Project is located approximately 40 kilometres (km) north-east of Mudgee near the village of Wollar within the Mid-Western Regional local government area (LGA)[1], in central New South Wales (NSW) (Figures ES-1 and ES-2). The Project includes the development of an open cut mining operation, together with the construction and operation of: a Coal Handling and Preparation Plant (CHPP); raw and product coal handling facilities; and rail and train loading infrastructure.

ES1.1 PROJECT OVERVIEW

The Project is being developed by Wilpinjong Coal Pty Limited (WCPL) (a wholly owned subsidiary of Excel Coal Limited) and is scheduled to commence in the first quarter of 2006, with an expected Project life of 21 years. A summary of key Project information is presented in Table ES-1.

The Project would include:

- development and operation of an open cut mine within the Mining Lease Application (MLA 1) area to produce coal for domestic electricity generation and export markets;
- selective highwall mining of the Ulan Seam within the MLA 1 area;
- a CHPP and mine facilities area;
- water management infrastructure including the relocation of Cumbo Creek;
- water supply bores and associated pump and pipeline system;
- placement of mine waste rock (i.e. overburden, interburden/partings and coarse rejects) predominantly within mined-out voids;
- placement of tailings within a combination of out-of-pit and in-pit tailings storages;
- development and rehabilitation of final mine landforms, and establishment of woodland vegetation in areas adjacent to the Project;
- a mine access road, temporary construction camp access road, internal access roads and haul roads;
- closure of Wilpinjong Road and Bungulla Road;
- re-alignment of two sections of Ulan-Wollar Road (including the relocation of two road-rail crossings);
- relocation of the existing 11 kilovolt (kV) electricity transmission line;
- an on-site temporary construction camp to accommodate up to 100 people during the construction phase;
- a rail spur and rail loop;
- coal handling and train loading infrastructure;
- transportation of product coal to market via train; and
- Enhancement and Conservation Areas (ECAs).

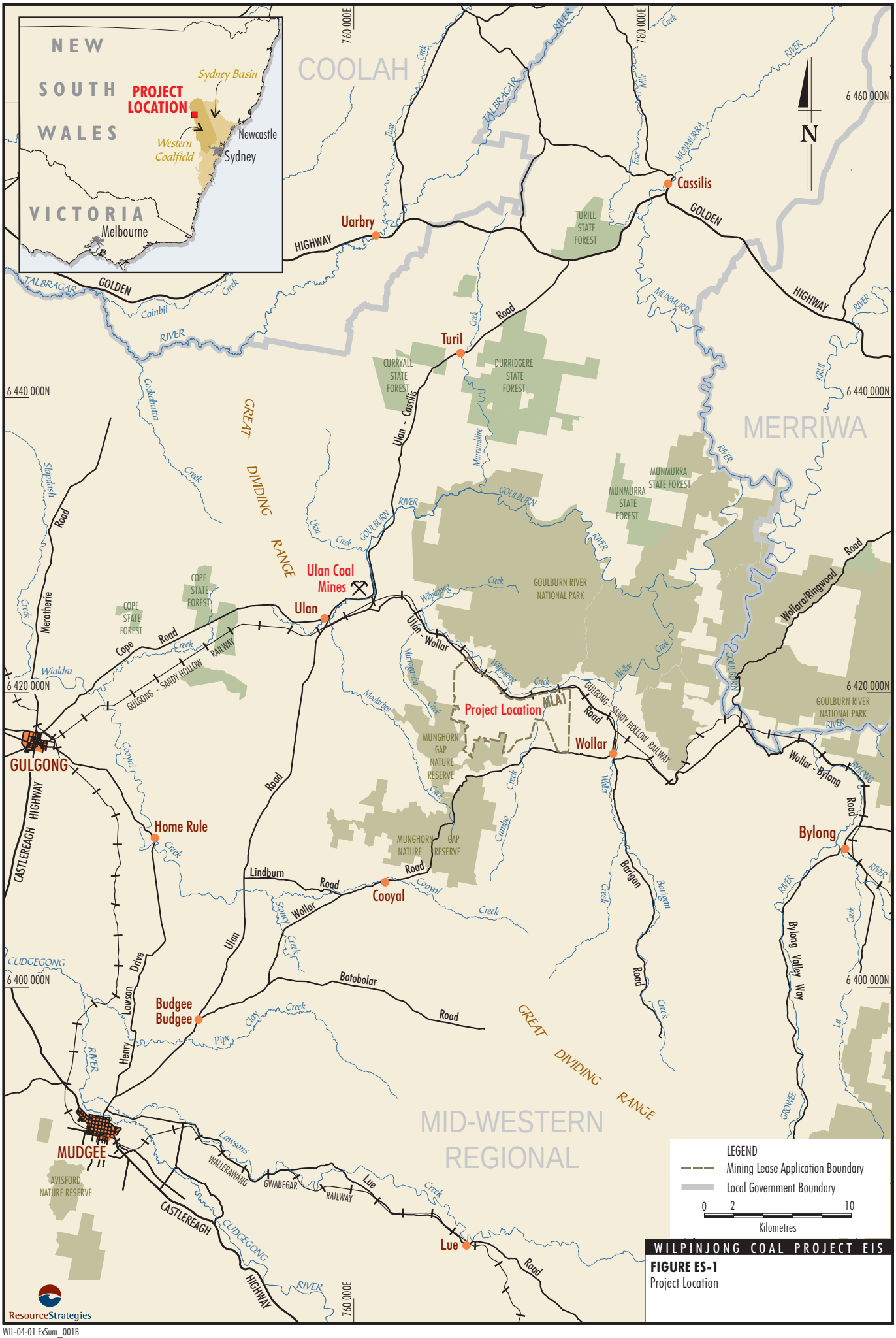
Electricity for the Project would be provided via an extension of the 66 kV electricity transmission line from the Ulan switching station. The proposed electricity transmission line extension would be subject to a separate environmental assessment and approval process.

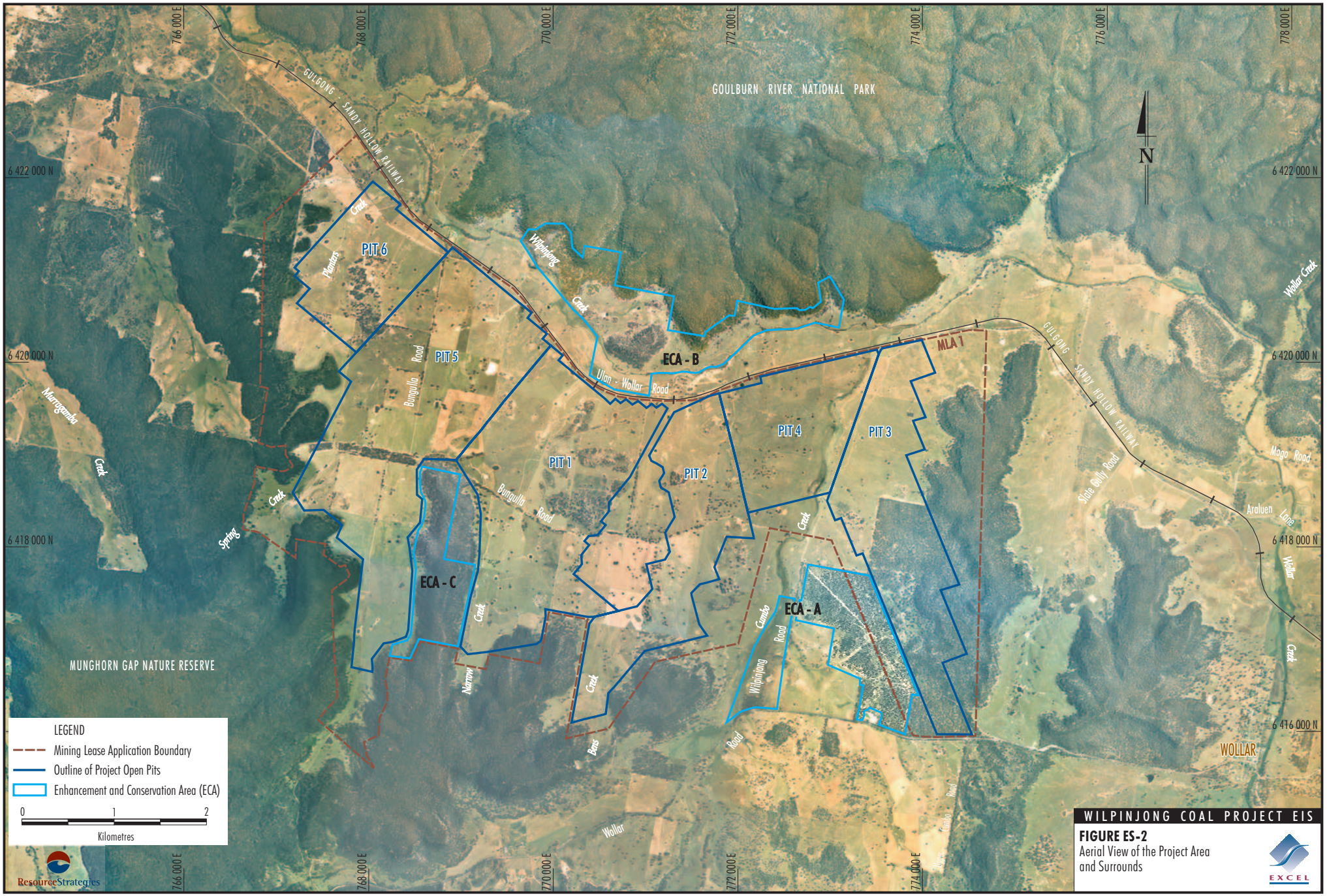
The Project has a peak production rate of 13 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. Up to approximately 8.5 Mtpa of the ROM coal would be washed in the CHPP.

ES1.2 DEVELOPMENT APPROVAL PROCESS

Approval for the Project is sought in the form of a single Development Application (DA). The Project DA area is shown on Figure ES-3. The Project DA would be assessed in accordance with the framework established by the *Environmental Planning and Assessment Act, 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulations).

[1] The Mid-Western Regional LGA was proclaimed by the NSW Government on 26 May 2004. The LGA comprises all of the previous Mudgee LGA and part of the former Merriwa and Rylstone LGAs.

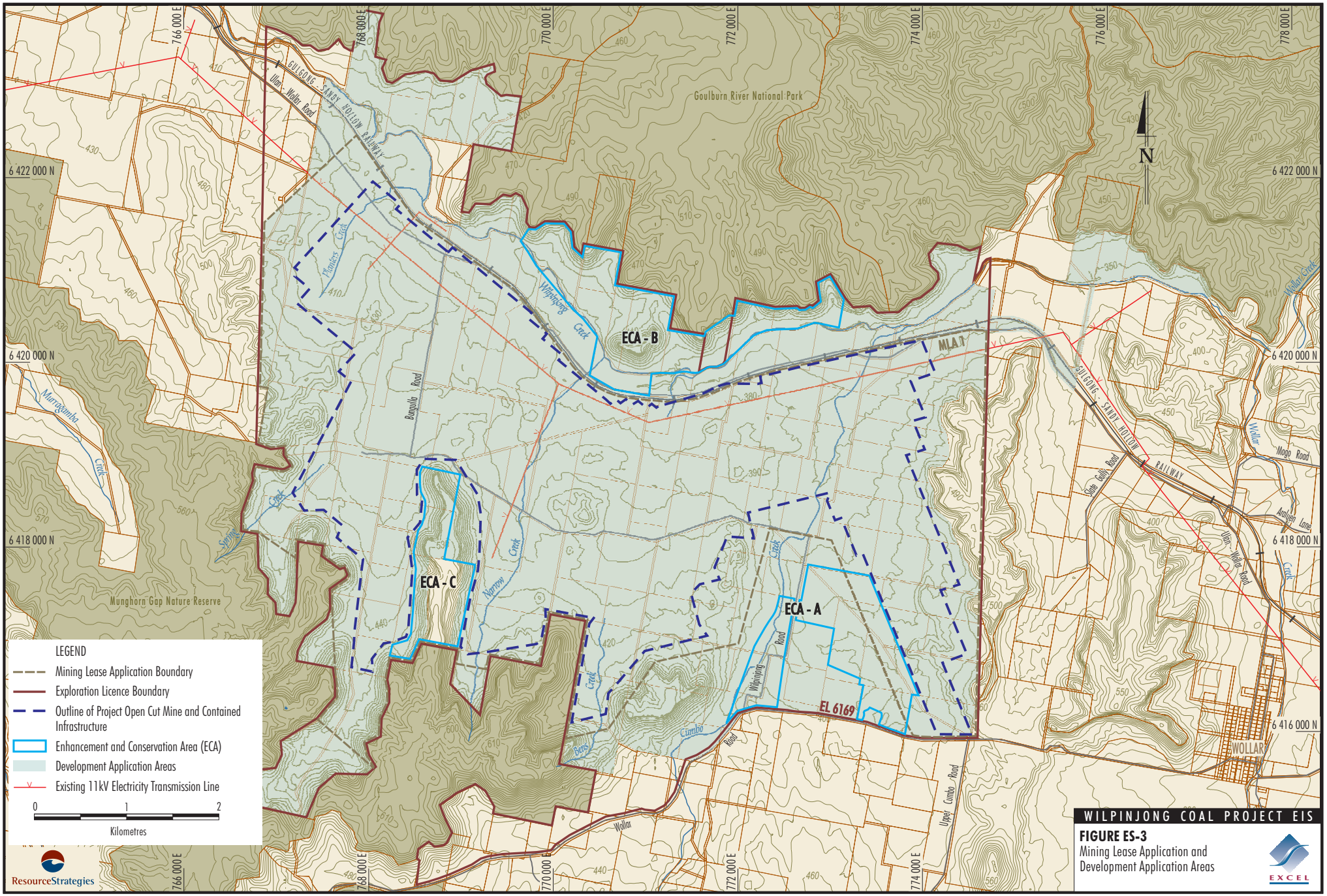

NEW SOUTH WALES
VICTORIA
Melbourne
Sydney Basin
PROJECT LOCATION
Western Coalfield
Newcastle
Sydney
COOLAH
MERRIWA
MID-WESTERN REGIONAL
760 000E
780 000E
6 460 000N
6 440 000N
6 420 000N
6 400 000N
N
Uarbry
Cassilis
Turil
Ulan Coal Mines
Ulan
Project Location
MLA1
Wollar
GULGONG
Home Rule
Cooyal
Budgee Budgee
MUDGEE
Bylong
Lue
Wollara/Ringwood Road
Ulan - Wollar Road
Ulan - Cassilis Road
Golden Highway
Castlereagh Highway
Gulgong - Sandy Hollow Railway
Great Dividing Range
Goulburn River National Park
Munmurra State Forest
Turill State Forest
Durridgere State Forest
Curryall State Forest
Cope State Forest
Munghorn Gap Nature Reserve
Avisford Nature Reserve
Goulburn River
Talbragar River
Cainbil Creek
Cobbabutta Creek
Merotherie Creek
Wialdra Creek
Coxyal Creek
Moolarben Creek
Munnamulla Creek
Wilpinjong Creek
Ulan Creek
Munmurra River
Krui River
Bylong River
Barigan Creek
Cumbo Creek
Lawsons Creek
Wallerawang
Gwabegar Railway
Lue Creek
Clay Pipe Creek
Henry Lawson Drive
Lindburn Road
Botobolar Road
Barigan Road
Bylong Valley Way
Cudgegong River
Growee
LEGEND
Mining Lease Application Boundary
Local Government Boundary
0 2 10
Kilometres
WILPINJONG COAL PROJECT EIS
FIGURE ES-1
Project Location
ResourceStrategies
WIL-04-01 ExSum_001B



WILPINJONG COAL PROJECT EIS

FIGURE ES-2
Aerial View of the Project Area and Surrounds

EXCEL



WILPINJONG COAL PROJECT EIS

FIGURE ES-3
Mining Lease Application and Development Application Areas

EXCEL

Table ES-1
Project Snapshot

Summary	
Project	Open cut mine, extracting up to 13 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal for processing and supply to both domestic electricity generation and export markets. Construction and operation of rail and coal handling/train loading infrastructure to facilitate transport of product coal to market.
Proponent	Wilpinjong Coal Pty Limited (WCPL), which is a wholly owned subsidiary of Excel Coal Limited.
Tenement Status	WCPL has applied for a mining lease covering a 2,800 hectares (ha) portion of Exploration Licence (EL) 6169.
Mining	Open cut mining at a rate of up to 13 Mtpa of ROM coal with an average stripping ratio of 1.3:1 (bank cubic metres waste rock:tonne ROM coal) and an estimated total open cut reserve of approximately 251 million tonnes (Mt).
Mine Waste Rock Management	Waste rock would be deposited predominantly within mined-out voids.
Coal Washing	Construction and operation of a Coal Handling and Preparation Plant (CHPP) capable of washing up to approximately 8.5 Mtpa of ROM coal.
Water Supply	Peak make-up water demand of approximately 6.2 million litres (ML) per day to be met from runoff recovered from mine operational areas, recovery from tailings disposal areas, open cut dewatering, advanced dewatering of pit areas and supply from a borefield.
Water Supply Borefield and Pipeline	Up to 19 bores proposed at various locations north of MLA 1. Water extracted from the water supply bores would be reticulated to the CHPP water supply storage.
Coarse Rejects and Tailings Management	Coarse rejects would be placed predominantly within mined-out voids. Apart from initial tailings disposal in a partitioned section of the CHPP water supply storage, all tailings would be placed within in-pit tailings disposal areas.
Cumbo Creek Relocation	A block bank would be constructed across Cumbo Creek to direct sub-surface and surface flows into a relocation corridor constructed adjacent to Cumbo Creek.
Project Life	An expected Project life of 21 years (from the date of grant of a mining lease).
Employment	Construction workforce of 200 employees on average and an average operational workforce of 100 employees (with up to 162 employees at peak production).
Construction	Construction of the rail spur and rail loop, coal stockpiling, reclaim and train loading infrastructure, CHPP and mine facilities area would be undertaken over a period of approximately 6 months.
Construction Camp	Accommodation for up to 100 employees on-site during the construction phase.
Hours of Operation	Mining operations would take place 24 hours per day, seven days per week. Construction activities would generally be undertaken between 7.00 am and 6.00 pm, up to seven days per week. Trains would operate 24 hours per day, seven days per week (expected average of four trains per day).
Product Coal	Production of up to 10 Mtpa of coal predominantly for the purpose of fulfilling contractual obligations to Macquarie Generation. Approximately 147 Mt and 33 Mt of product coal would be produced for domestic use and export, respectively.
Product Coal Transport	Product coal would be loaded onto trains and transported to market via the Project rail loop and rail spur connected to the Gulgong-Sandy Hollow railway.
Roadworks	Mine access road, internal access roads, haul roads and temporary access to and from the construction camp. Closure of Wilpinjong Road and Bungulla Road. Re-alignment of two sections of Ulan-Wollar Road later in the Project life (including the relocation of two road-rail crossings).
Enhancement and Conservation Areas (ECAs)	The ECAs have been developed to help conserve and expand areas of remnant vegetation and protect Aboriginal cultural heritage sites, while enhancing the habitat available to flora and fauna.

A declaration made by the Minister for Urban Affairs and Planning on 29 June 2001, under section 76A (7) of the EP&A Act, identifies classes of development that are considered to be State significant development. The Project is State significant development under this declaration.

In accordance with section 76A (9) of the EP&A Act, the Minister for Infrastructure and Planning is the consent authority for State significant development.

A summary of the requirements of the Director-General of the Department of Infrastructure, Planning and Natural Resources (DIPNR) is provided in Table ES-2. Table ES-2 also provides an indication of where each Director-General's Requirement (DGR) is addressed in the main text of the EIS.

ES1.3 COMMUNITY CONSULTATION

A Project Community Consultative Committee (CCC) was formed on 11 February 2004, enabling WCPL to inform the community of its plans and assessment findings and allowing community representatives to raise any concerns identified by the wider community. The Project CCC comprises representatives of the community, the Mid-Western Regional Council, Department of Primary Industries – Mineral Resources (DPI-MR) (formerly DMR) and WCPL.

Public meetings/forums held in August 2004, December 2004 and March 2005 at Wollar have also been used to encourage the community to raise any concerns they might have during the environmental assessment period.

During the CCC and public meeting/forums, updates of the status of environmental studies were provided. On 23 March 2005, preliminary EIS assessment findings in relation to issues of community interest were presented and discussed at a public meeting in Wollar. Table ES-3 provides a synopsis of relevant issues raised by local landholders and the general public during the consultation programme and outlines where these issues have been addressed in the EIS main text.

WCPL is a member of the Wilpinjong Landcare Group. WCPL would co-operate with Landcare in regard to land management initiatives within the Project area.

ES2 PROJECT DESCRIPTION

The Wilpinjong resource is located in the Ulan-Bylong area in the northern sector of the Western Coalfield. The Wilpinjong resource has been identified by the NSW Government as a long-term source of coal for NSW electricity generators (DMR, 2002a).

The Wilpinjong resource is contained in the Ulan Coal which occurs in the lower part of the Late Permian Illawarra Coal Measures. The Ulan Coal is divided into two sections (upper and lower). The combined sections of the Ulan Coal are commonly named and herein referred to as the Ulan Seam.

Exploration completed within Exploration Licence (EL) 6169 (Figure ES-3) has delineated an *in-situ* coal resource in the order of 523 million tonnes (Mt), including an estimated total open cut ROM coal reserve of approximately 251 Mt.

A 21 year mine plan has been prepared at a mining rate of up to 13 Mtpa of ROM coal that is expected to produce approximately 147 Mt of product coal for sale to domestic electricity generators and approximately 33 Mt of product coal to export.

ES2.1 INITIAL CONSTRUCTION AND OTHER DEVELOPMENT ACTIVITIES

An on-site temporary construction camp for up to 100 people would be located to the north of the Project on WCPL-owned land (Figure ES-4) and would comprise up to 25 demountables, mess area, recreation area and ablution facilities. The construction camp would be used during the Project construction period which is estimated to be approximately six months.

The primary access to the Project would be provided from the south via construction of an unsealed two-lane mine access road connecting the mine facilities area to Wollar Road. The mine access road would generally be constructed along the alignment of Wilpinjong Road.

A mine facilities area would be constructed to the immediate south-east of the rail loop (Figure ES-4) and would contain a workshop, storage building, office buildings, muster area and a range of service facilities.

Table ES-2
Director-General's EIS Requirements – Reference Summary

Specific Issues to be Addressed	Main Text Reference
Under clause 73(1) of the *Environmental Planning and Assessment Regulation, 2000*, the Director-General requires the following specific issues to be addressed in the EIS:	
Description of the Proposal Describe and justify the proposal, clearly identifying the resource, the proposed site, the proposed works (including any rehabilitation works), and the proposed intensity and duration of mining operations.	Sections 1, 2 and 5
Permissibility Demonstrate that the proposal is permissible with consent.	Section 1.3.1
Statutory Instruments/Policies Assess the proposal against the relevant provisions in: • *State Environmental Planning Policy No. 11 – Traffic Generating Developments*; • *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*; • *State Environmental Planning Policy No. 44 – Koala Habitat Protection*; • *State Environmental Planning Policy No. 55 – Remediation of Land*; • *Mudgee Local Environmental Plan 1998*; and • any relevant development control plan or Section 94 contribution plan.	Section 1.3
Key Issues Assess the following potential impacts of the proposal, and describe what measures would be implemented to avoid, mitigate, off-set and/or manage these potential impacts:	
(a) surface water and groundwater;	Sections 4.3, 4.4, 5.1.2.4, 5.1.2.5, 5.1.2.6, 5.1.3.6 and 5.1.3.7
(a) noise;	Sections 4.5 and 5.1.3.3
(b) blasting and vibration;	Sections 4.5 and 5.1.3.4
(c) air quality (including odour);	Sections 4.6 and 5.1.3.2
(d) heritage, both Aboriginal and non-Aboriginal;	Sections 4.10, 4.11 and 5.1.2.10
(e) fauna and flora, particularly on critical habitats, threatened species, populations, or ecological communities (including potential off-sets);	Sections 4.7 to 4.9, and 5
(f) soil;	Sections 4.1 and 5
(g) traffic, transport, utilities and services;	Sections 2.10, 4.12, 4.13, 5.1.2.9 and 5.1.3.10
(h) hazards;	Section 4.16
(i) visual;	Section 4.2
(j) waste management;	Sections 2.8 and 2.11
(k) social; and	Sections 1.5 and 4.14
(l) economic (including detailed benefit-cost analysis).	Section 4.15
Environmental Monitoring and Management Plans Describe in detail how the environmental performance of the proposal would be monitored and managed over time.	Sections 4 and 5
Water Resources During the preparation of the EIS, pay particular attention to the potential surface water, groundwater and water supply impacts of the proposal, both locally and regionally, and to consider the proposal's consistency and compliance with relevant water management legislation and policies.	Sections 4.3, 4.4, and 4.7 to 4.9
Flora and Fauna/Vegetation Clearing The flora and fauna assessment in the EIS should explicitly consider the potential impacts of the proposal on the adjoining National Parks and Nature Reserves.	Sections 4.7 to 4.9

Table ES-2 (Continued)
Director-General's EIS Requirements – Reference Summary

Specific Issues to be Addressed	Main Text Reference
Under clause 73(1) of the *Environmental Planning and Assessment Regulation, 2000*, the Director-General requires the following specific issues to be addressed in the EIS (Continued):	
EIS Guidelines During preparation of the EIS, consider the Department's EIS guideline on *Coal Mines and Associated Infrastructure*.	Section 1.4
Integrated Authorities The agencies that administer integrated approvals should be consulted and their requirements addressed in the EIS.	Attachment 1 and Section 6
Consultation During the preparation of the EIS, relevant local, State and Commonwealth government authorities, service providers and community groups in the area should be consulted and address any issues they may raise in the EIS. In particular, consult the surrounding landowners and occupiers that are likely to be affected by the proposal. The EIS must include a report indicating who was consulted, what consultation occurred and what issues were raised during this consultation.	Section 1.5 Table 1-3 and Section 1.5
Pursuant to Schedule 2 and Clause 72 of the *Environmental Planning and Assessment Regulation, 2000*, an EIS must include:	
1. A summary of the EIS.	Executive Summary
2. A statement of the objectives of the development or activity.	Section 1.2.1
3. An analysis of any feasible alternatives to the carrying out of the development or activity, having regard to its objectives, including the consequences of not carrying out the development or activity.	Sections 1.7 and 1.8
4. An analysis of the development or activity including:	
(a) a full description of the development or activity;	Section 2
(b) a general description of the environment likely to be affected by the development or activity, together with a detailed description of those aspects of the environment that are likely to be significantly affected;	Section 3
(c) the likely impact on the environment of the development or activity;	Section 4
(d) a full description of the measures proposed to mitigate any adverse effects of the development or activity on the environment; and	Section 4
(e) a list of any approvals that must be obtained under any Act or law before the development or activity may be lawfully carried out.	Section 1.3
5. A compilation (in a single section of the EIS) of the measures referred to in item 4(d).	Section 4
6. The reasons justifying the carrying out of the development or activity in the manner proposed, having regard to biophysical, economic and social considerations, including the following principles of ecologically sustainable development: (a) The precautionary principle. (b) Inter-generational equity. (c) Conservation of biological diversity and ecological integrity. (d) Improved valuation, pricing and incentive mechanisms.	Section 1.6

Source: DIPNR (2004a)

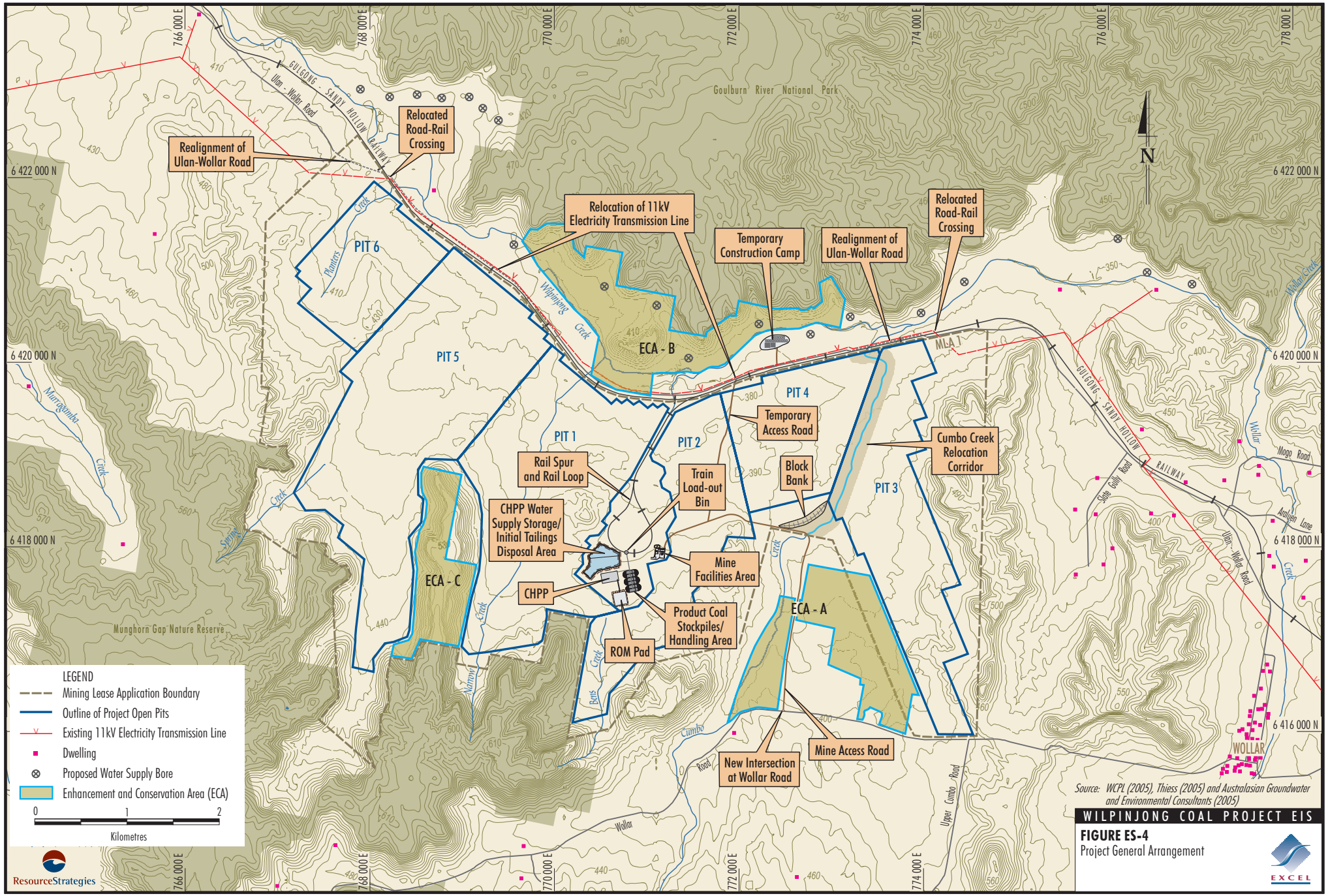

Realignment of Ulan-Wollar Road
Relocated Road-Rail Crossing
Relocation of 11kV Electricity Transmission Line
Temporary Construction Camp
Realignment of Ulan-Wollar Road
Relocated Road-Rail Crossing
PIT 6
PIT 5
PIT 4
PIT 3
PIT 2
PIT 1
ECA - A
ECA - B
ECA - C
Temporary Access Road
Cumbo Creek Relocation Corridor
Rail Spur and Rail Loop
Train Load-out Bin
Block Bank
CHPP Water Supply Storage/ Initial Tailings Disposal Area
Mine Facilities Area
CHPP
Product Coal Stockpiles/ Handling Area
ROM Pad
New Intersection at Wollar Road
Mine Access Road
Goulburn River National Park
Munghorn Gap Nature Reserve
WOLLAR
766 000 E
768 000 E
770 000 E
772 000 E
774 000 E
776 000 E
778 000 E
6 422 000 N
6 420 000 N
6 418 000 N
6 416 000 N
N
LEGEND
Mining Lease Application Boundary
Outline of Project Open Pits
Existing 11kV Electricity Transmission Line
Dwelling
Proposed Water Supply Bore
Enhancement and Conservation Area (ECA)
0 1 2
Kilometres
ResourceStrategies
Source: WCPL (2005), Thiess (2005) and Australasian Groundwater and Environmental Consultants (2005)
WILPINJONG COAL PROJECT EIS
FIGURE ES-4
Project General Arrangement
EXCEL

Table ES-3
Summary of Relevant Issues Raised By the Public During Consultation

Relevant Issues Raised	Section of EIS where Addressed
Description of the Project, including timing of commencement.	Sections 1.2.1 and 2
Design of the Cumbo Creek relocation (including groundwater/salinity aspects).	Sections 2.9, 4.3 and 5.1.2.6
Project water requirements and on-site water management.	Sections 2.9, 4.3, 4.4, 5.1.2.4, 5.1.2.5 and 5.1.2.6
Description of the Project assessment process.	Section 1.3
Economic benefits and employment/contracting opportunities.	Sections 2.12, 4.14 and 4.15
Review process for the Project monitoring programme.	Section 5.1
Modification process for the Project following consent.	If required – would follow EP&A Act requirements
Contributions from the Project to local community infrastructure in Wollar.	Section 1.3.5
Fate of Landcare regeneration areas.	Section 1.5.1
Project potential environmental impacts and management:	
• Groundwater issues (e.g. salinity, monitoring programme, drawdown and potential for contamination by tailings).	Sections 4.4, 5.1.2.5 and 5.1.3.7
• Surface water issues (e.g. potential impact on Wilpinjong Creek).	Sections 4.3, 4.4, 5.1.2.4 and 5.1.3.6
• Blasting (e.g. timing, frequency).	Sections 2.4.5, 4.5.6 and 5.1.3.4
• Flora/fauna (e.g. potential impact on threatened species).	Sections 4.7 to 4.9, 5.1.2.7, 5.2 to 5.4
• Noise (operational and train noise).	Sections 4.5 and 5.1.3.3
• Greenhouse gas emissions.	Section 4.6.4
• Dust (health risks).	Sections 4.6 and 5.1.3.2
• Increased train movements and associated risk to vehicles and people.	Sections 4.13 and 4.16
• Land management at the Project site (during and post-mining).	Sections 4.1 and 5
• Road upgrades required, including the need for lighting at the access road intersection with Wollar Road.	Sections 2.3.2, 4.2, 4.12 and 5.1.2.9
• Ulan-Wollar Road relocation.	Sections 2.3.9 and 5.1.2.9
• Groundwater bore drawdown monitoring programme and mitigation measures for bores potentially impacted by the Project.	Sections 4.4, 5.1.2.5 and 5.1.3.7
• Mine dewatering and use of water from dewatering.	Sections 2.9, 4.4 and 5.1.2.4

A CHPP would be constructed to size, screen and wash ROM coal to domestic and export market coal specifications. The CHPP would be constructed during the first six months of Year 1. Once fully commissioned, the CHPP would have a washing capacity of up to 8.5 Mtpa.

The Project water supply borefield would be developed to the north and north-east of the Project open pits. The Project water supply borefield would comprise a network of up to 19 individual bores. Water extracted from individual bores would be reticulated to the CHPP water supply storage.

The product coal stockpiles/handling area and train loading infrastructure required for the Project would include a product coal conveyor from the CHPP to the product coal stockpiles, a product coal handling and reclaim system and a train load-out conveyor to the train load-out bin.

The Project would include construction of a rail spur and rail loop with an approximate total rail length of 3.8 km from the Gulgong-Sandy Hollow railway.

The extent of the open cut operations in the north of the Project area would require the re-alignment of two sections of Ulan-Wollar Road and the relocation of two road-rail crossings.

ES2.2 OPEN CUT OPERATIONS

Mining would be carried out using open cut methods at a rate of up to 13 Mtpa of ROM coal. Six pits have been delineated to extract the open cut reserves over the 21 year Project life (Figure ES-4).

The general sequence of open cut mining operations for the Project would be as follows:

1. Vegetation clearing and topsoil/subsoil stripping. Stripped topsoil and subsoil would be used directly in progressive rehabilitation or placed in temporary stockpiles.
2. Drilling and blasting of overburden, with some waste rock "throw blast" into the adjacent mined-out strip.
3. Dozer pushing of blasted overburden into the adjacent mined-out strip to expose the upper ply of the Ulan Seam. Exposed coal would then be selectively mined and hauled by trucks to the ROM coal stockpiles.
4. Interburden/parting material would then be ripped, pushed or excavated and hauled to expose the underlying working sections of the Ulan Seam.
5. Progressive rehabilitation of the mine waste rock emplacements.

As open cut operations reach pit limits, there may be opportunities to recover additional coal through highwall mining of selected plies of the Ulan Seam. The highwall mining operation would enable WCPL to recover coal which otherwise would be sterilised.

The CHPP would operate with a design capacity of approximately 1,200 tonnes per hour (tph) ROM coal feed.

Product coal from the CHPP would be stacked in the product coal stockpile areas prior to being loaded onto trains via the train loading infrastructure, rail spur and rail loop. Product coal would then be transported by rail to either the Bayswater/Liddell rail unloader or the Port of Newcastle.

ES2.3 MINE WASTE ROCK AND CHPP REJECTS/TAILINGS MANAGEMENT

Approximately 330 million bank cubic metres of waste rock material would be generated during the life of the Project. Overburden and interburden/parting material would be removed to uncover the various plies of the Ulan Seam using open cut mining methods. Overburden material would generally be placed adjacent to and behind the advancing open cut.

Interburden/parting material would generally either be ripped by dozer and loaded onto haul trucks using an excavator for placement in-pit behind the advancing open cut, or ripped and pushed by dozer directly into the adjacent mined-out strip in the bottom of the pit.

Approximately 47 Mt of coarse reject material would be produced from the CHPP over the life of the Project. Coarse reject material would be placed within the mine waste rock emplacements with overburden and interburden/parting material.

Approximately 24 Mt of tailings (dry weight) would be produced over the life of the Project. Initially, tailings would be placed in a partitioned section of the CHPP water supply storage. Subsequently, tailings would be pumped as slurry to designated tailings disposal areas in the open cut voids from where supernatant waters would be recovered for re-use in the CHPP. Tailings disposal areas would then be progressively capped with overburden material to a minimum depth of cover of 2 m prior to final profiling and rehabilitation.

ES2.4 WATER MANAGEMENT

The water management strategy for the Project is based on the containment and re-use of mine water as well as the control of sediment that may be potentially carried with runoff from disturbed areas (such as mine waste rock emplacements) prior to rehabilitation.

The key components of the water management strategy include the separation of undisturbed area runoff from disturbed area runoff by upslope diversions, collection and re-use of surface runoff from disturbed areas, and capture and on-site containment of mine water, comprising groundwater inflows and incident rainfall-runoff to the open cut.

The Project water management system includes permanent structures that would continue to operate post-closure (e.g. the Cumbo Creek relocation), and temporary structures that would only be required until the completion of rehabilitation works (e.g. sediment control structures).

The Project would include the relocation of Cumbo Creek. The relocation would comprise the construction of a block bank and sub-surface cut-off wall across Cumbo Creek upstream of Pit 4 to direct flows into a relocation corridor constructed adjacent to Cumbo Creek. The relocation corridor would be constructed in Year 8, once the underlying coal has been mined.

Project water supply requirements include CHPP operation, washdown of mobile equipment, dust suppression on haul roads and dust emission control sprays in the ROM and product coal stockpile areas. The majority of the Project make-up water supply requirements would be met by dewatering of the open cut mining areas and the Project water supply borefield.

ES3 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

ES3.1 LAND RESOURCES

Landforms of the Project area are characterised by the narrow flood plains associated with the tributaries of the Goulburn River, the undulating foothills, ridges and escarpments of the Great Dividing Range and the dissected landforms of the Goulburn River National Park.

Local elevations range from approximately 350 m AHD (Australian Height Datum) on Wilpinjong Creek just to the east of the confluence with Cumbo Creek, to approximately 745 m AHD at a series of peaks to the south of the Project along the Great Dividing Range. Elevations in the Goulburn River National Park to the north of the Project are generally less than 600 m AHD.

Within MLA 1 (Figure ES-3), elevations generally range from approximately 350 m to 440 m AHD, while escarpment areas and narrow ridges adjoining the Munghorn Gap Nature Reserve rise to above 510 m AHD in places (Figure ES-3).

The main modifications to the existing topography that would potentially result from the Project relate to the open cut mining operations. Modifications to topography and landscape features would also result from the construction of infrastructure.

Mine infrastructure and landforms have been designed and located to integrate with existing topography and landscape features by backfilling behind the advancing open cut and progressive rehabilitation of the Project landforms in a manner that maximises integration with the surrounding landscape.

ES3.1.1 Land Contamination

A Land Contamination Assessment of the Project area has been conducted in accordance with the requirements of State Environmental Planning Policy (SEPP) 55 (Remediation of Land). Land in the area was cleared during the late 1800s and early 1900s and primarily used for grazing sheep and cattle. This assessment concluded that the Project area is considered suitable for a landuse change from predominantly agriculture to the development of the Project.

ES3.1.2 Visual

The visual character of the local setting is defined by the largely cleared and gently sloping lands of the pastoral valley landscape unit comprising the Wilpinjong and Cumbo Creek floodplain. The MLA 1 area is surrounded by the rising and well-vegetated backdrop of the Goulburn River National Park, Munghorn Gap Nature Reserve and wooded ridgelines.

Other features of the local setting include power supply infrastructure associated with the existing 11 kV transmission line, Ulan-Wollar Road and Gulgong-Sandy Hollow railway.

Within the local setting, views of the Project would include the safety bunds constructed along selected boundary areas of each open pit with distant views of open cut mining operations also available from some elevated areas. The safety bunds would be revegetated and this would reduce the level of visual impact over time.

Potential night-lighting impacts would be generally restricted to the production of a light glow above the operational areas that contrasts with the night sky. This effect would decrease with distance, however, the glow would be visible at nearby residences and along local roads. Some further light spill may occur on nights when there is a low cloud base and reflection off the cloud base occurs.

Measures that would be employed to mitigate potential visual impacts include the progressive backfilling of the mined-out voids behind the advancing open cut, progressive rehabilitation to commence soon after the completion of re-profiling of the backfilled landform and vegetation screening. In addition, design and construction of Project infrastructure would be undertaken in a manner that minimises visual contrasts.

Night-lighting would be restricted to the minimum required for operational and safety requirements and would be directed away from roads and sensitive viewpoints. Lighting above topographic screens would be directed downwards and light shields would be used to limit the spill of lighting where practicable.

ES3.2 HYDROLOGY

ES3.2.1 Surface Water

The Project is located at the headwaters of the Goulburn River catchment which is a major tributary of the Hunter River. The Goulburn River joins the Hunter River at Denman. The Hunter River catchment drains some 22,000 km^2 of central-eastern NSW to the Pacific Ocean at Newcastle. At a local level, the Project lies in the Wilpinjong Creek catchment and is drained by a number of local tributary watercourses of Wilpinjong Creek including Cumbo Creek, Planters Creek, Spring Creek, Narrow Creek and Bens Creek. Wilpinjong Creek flows into Wollar Creek approximately 4 km downstream of the confluence of Cumbo and Wilpinjong Creeks.

Surface water runoff from mine landforms and disturbance areas could potentially contain sediments, soluble salts, process reagents (i.e. flocculant/magnetite), fuels, oils and grease. The potential surface water quality impact scenarios that relate to these contaminants would generally be drainage of sediment laden runoff during construction or uncontrolled drainage/spills/pipeline rupture during operations. These potential impacts would be mitigated by the development of the Project water management system.

The Project would potentially affect flows in Wilpinjong Creek as a result of reductions in overland flow from the Project catchment and indirectly through reductions in the rate of discharge of groundwater to the creek.

Flows passing any point in a stream predominantly comprise drainage of water from the upstream catchment which originated as rainfall, but may also include flow derived from discharge from groundwater aquifers which extend beyond surface catchment boundaries.

The potential maximum flow reduction in Wilpinjong Creek equates to an 11% reduction of annual average flow. Whilst the predicted changes to low flows in Wilpinjong Creek would be expected to be noticeable as reduced flow persistence, the magnitude of predicted effects can be compared to those that occur due to other changes in catchment condition and landuse such as changes in stocking rates, construction of farm dams, water harvesting or bushfires which can also result in noticeable changes to low flows.

The relative effects on the magnitude and duration of low flows would reduce significantly downstream of the confluence of Wilpinjong and Wollar Creeks due to additional unaffected inflows from Wollar Creek. As such, the effects of flow reductions further downstream in Wollar Creek would not be discernible from other normal variations in flows resulting from the types of changes in catchment condition and landuse described above, and from the potential effect resulting from the proposed 10 km of creek enhancement works (i.e. exclusion of stock and riparian revegetation) on WCPL-owned lands.

Mitigation of the predicted reduction in average flows in Wilpinjong Creek would be in the form of designing the Project water management system to maximise the diversion of runoff from undisturbed areas around Project construction/development and operational areas, together with progressive rehabilitation to allow the free-draining of completed landforms. Mitigation would also be undertaken in the form of exclusion of livestock and the establishment of riparian vegetation along a total of 10 km of Wilpinjong Creek and Cumbo Creek.

ES3.2.2 Groundwater

Five aquifer systems have been recognised in the Project area. These include: alluvial and colluvial deposits; sandstones and siltstones of the Narrabeen Group; Illawarra Coal Measures overlaying the Ulan Seam; Ulan Seam; and Marrangaroo Sandstone.

Groundwater quality varies in the Project area according to the depth and age of the strata in which it occurs. The better quality groundwater is likely to be encountered in the alluvial deposits.

Numerical modelling of the aquifer drawdown in the Ulan Seam and the Marrangaroo Sandstone as a result of the development of the Project open-cuts and water supply borefield indicates a radius of the cone of depression of approximately 2.5 km to the east, 5 km to the west and 6.5 km to the north of the extremities of the Project open pit limits. The drawdown in the underlying Marrangaroo Sandstone is expected to be of a similar or slightly larger extent. The numerical modelling showed only a limited effect on the water levels in the alluvium/colluvium aquifer. The model also indicated that there would be no discernible effect on the groundwater and surface water regimes in the sandstone plateau (i.e. Narrabeen Group) that forms the Goulburn River National Park.

Groundwater model predictions indicate that mine dewatering and operation of the Project water supply borefield would reduce the average annual baseflow of Wilpinjong Creek due to the reduction in upward leakage from the underlying artesian aquifer formed in the Ulan Seam and underlying Marrangaroo Sandstone.

There are 14 groundwater bores in the vicinity of the Project area which are used to extract groundwater from the Ulan Seam aquifer. These bores are located within the area in which modelling has predicted some groundwater drawdown effect. Of these, all but two of these bores are on WCPL-owned land. A groundwater monitoring programme would be undertaken to monitor the impact on existing bores and wells. In the case that the data obtained from the groundwater monitoring programme indicates that the Project is having an adverse effect on existing groundwater users (i.e. reduced groundwater yield from existing bores), then the water supply would be re-instated by WCPL either by deepening the existing bore, construction of a new bore or by providing an alternate water supply.

Mitigation of the predicted reduction in average flows in Wilpinjong Creek would be in the form of designing the Project water management system to maximise the diversion of runoff from undisturbed areas around Project construction/development and operational areas, together with progressive rehabilitation to allow the free-draining of completed landforms. Mitigation would also be undertaken in the form of exclusion of livestock and the establishment of riparian vegetation along a total of 10 km of Wilpinjong Creek and Cumbo Creek.

ES3.3 ACOUSTICS

The NSW Department of Environment and Conservation (DEC) Industrial Noise Policy (INP) provides the framework and process for the Project noise impact assessment. Noise assessment criteria presented in Table ES-4 were derived for the Project based on background noise levels, which were characterised in accordance with INP objectives.

In cases where the Project-specific assessment criteria (Table ES-4) are not achieved, it does not automatically follow that all people exposed to the noise would find the noise noticeable or unacceptable. In subjective terms, exceedances of the INP Project-specific assessment criteria can be generally described as follows:

- negligible noise level increase (less than 1 dBA) (not noticeable by all people);
- marginal noise level increase (between 1 dBA and 2 dBA) (not noticeable by most people);
- moderate noise level increase (between 3 dBA and 5 dBA) (not noticeable by some people but may be noticeable by others); and
- appreciable noise level increase (greater than 5 dBA) (noticeable by most people).

Predictive noise emission modelling has been undertaken for six Project operational years (Years 3, 9, 11, 13, 14 and 21).

Table ES-5 summarises the privately owned dwellings where the $L_{Aeq(15minute)}$ intrusive emissions are predicted to exceed the Project-specific noise assessment criteria during operation. Figures ES-5 and ES-6 present the predicted noise emission contours for Year 9 and Year 14, respectively.

Privately owned vacant land was also assessed against the Project-specific noise assessment criteria. Privately owned vacant land where the criteria were predicted to be exceeded by greater than 5 dBA over more than 25% of the land area was the Gaffney (30) property.

The INP provides non-mandatory cumulative noise assessment guidelines that address existing and successive industrial development by setting acceptable (and maximum) cumulative $L_{Aeq(period)}$ amenity levels for all industrial (ie. non-transport related) noise in an area.

Table ES-4
Project-Specific Noise Assessment Criteria

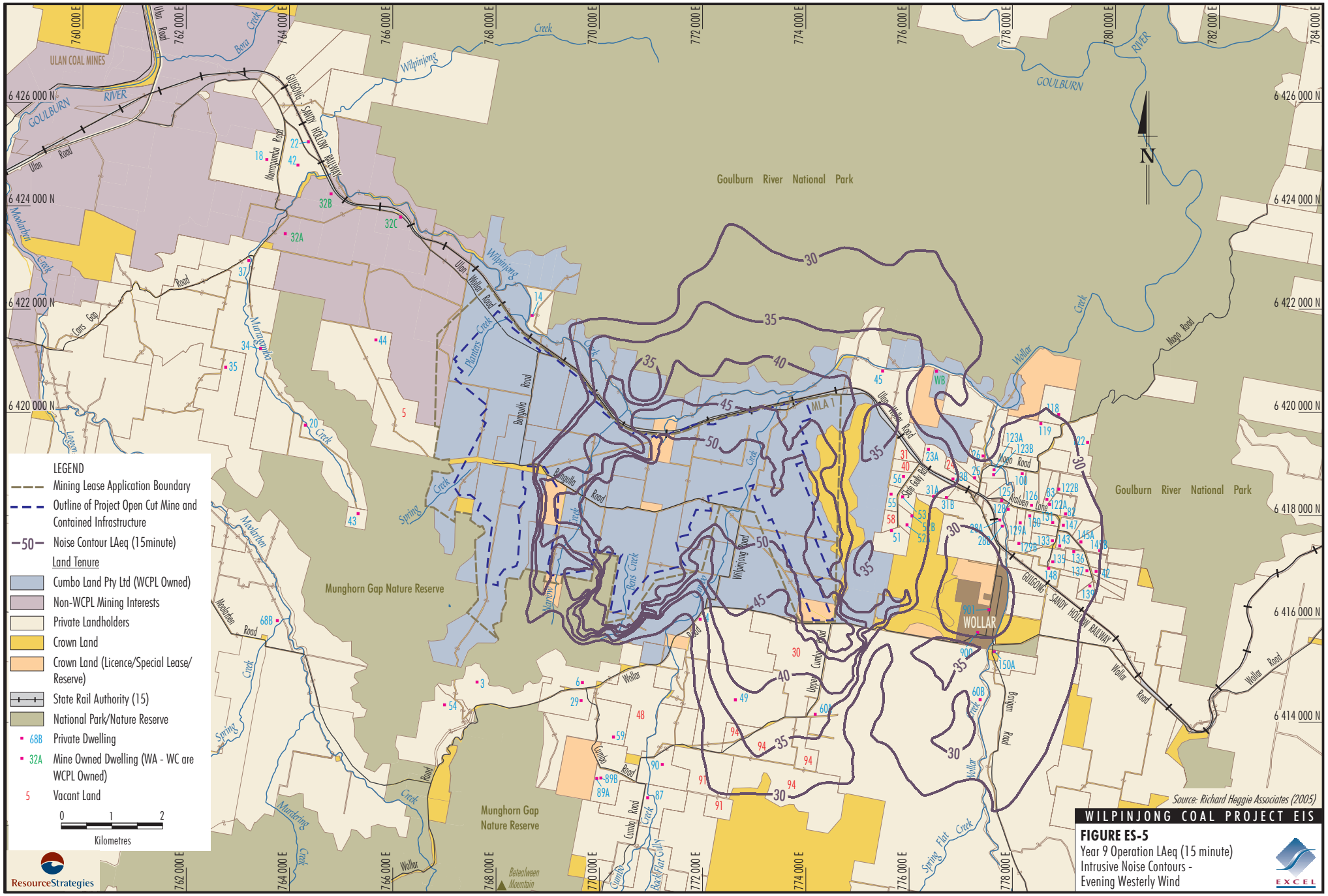
Locality	Reference/Land Owner	Project-Specific Noise Assessment Criteria					
		Intrusive $L_{Aeq(15minute)}$[1]			Amenity $L_{Aeq(period)}$[1]		
		Day	Evening	Night-time	Day	Evening	Night-time
Cumbo	6 Langshaw	35	35	35	50	45	40
	Other Residential	35	35	35	50	45	40
Wollar (south of the village of Wollar)	Residential	35	35	35	50	45	40
	150A St Luke's Anglican Church (Internal)	Place of Worship[2]			40	40	Not in use[3]
Wollar	Residential	36	35	35	55	45	40
	900 St Laurence O'Toole Catholic Church (Internal)	Place of Worship[2]			40	40	Not in use[3]
	901 Wollar School (Internal)	School Classroom[2]			35	35	
Araluen	60 Reid	35	35	35	50	45	40
	Other Residential	35	35	35	50	45	40
Slate Gully	Residential	35	35	35	50	45	40
Wilpinjong (north-east of the Project area)	WB Cumbo P/L	35	35	35	50	45	40
	Other Residential	35	35	35	50	45	40
Wilpinjong	Residential	35	35	35	50	45	40
Murragamba	42 Little/Salter	35	35	35	50	45	40
	34 Birt/Hayes	35	35	35	50	45	40
	Other Residential	35	35	35	50	45	40
Moolarben	Residential	35	35	35	50	45	40
Goulburn River National Park and Munghorn Gap Nature Reserve	-	Passive Recreation Area[2]			50	50	50

Source: Appendix D

[1] Daytime 7.00 am to 6.00 pm, Evening 6.00 pm to 10.00 pm, Night-time 10.00 pm to 7.00 am.

[2] Intrusive criteria apply to residential receptors only.

[3] It is understood that the churches and school are generally not utilised at night-time (i.e. after 10.00 pm).



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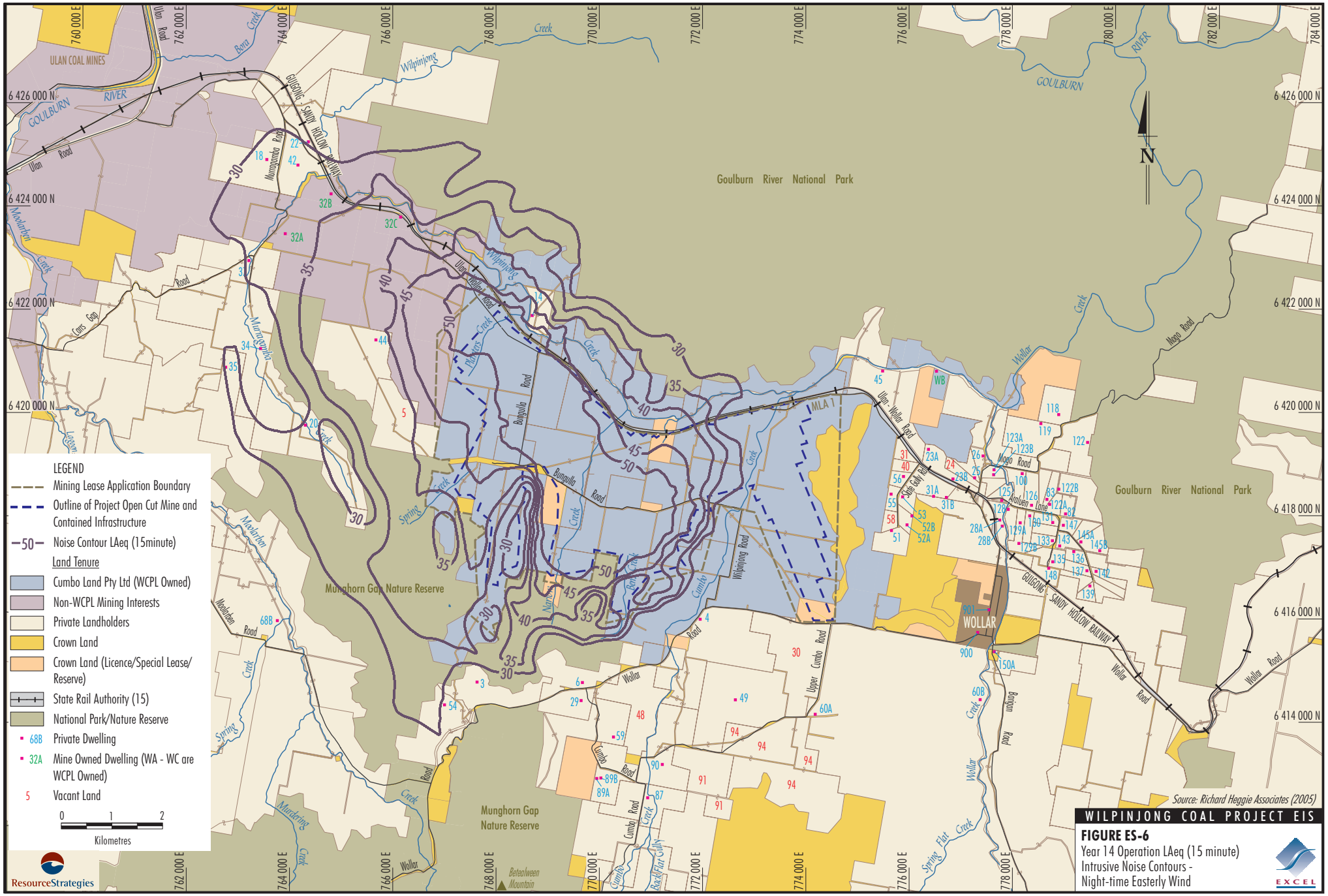

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Table ES-5
Private Dwellings within Noise Management and Affectation Zones

Locality	Period	Noise Management Zone		Noise Affectation Zone
		1 dBA to 2 dBA above Project-Specific Criteria	3 dBA to 5 dBA above Project-Specific Criteria	>5 dBA above Project-Specific Criteria
Cumbo	Evening/Night-time	59 Langshaw 90 Pattullo 29 Kattau	4 Robinson 49 Harkin 60A Reid	Nil
Araluen	Evening/Night-time	23B Bloomfield	23A Bloomfield	Nil
Slate Gully	Evening/Night-time	31A Conradt 31B Conradt	51 Bailey 52A Long 52B Long 53 Reynolds 55 Fox 56 Roger	Nil
Wilpinjong (north-east of the Project area)	Evening/Night-time	Nil	Nil	45 Smith
Wilpinjong	Evening/Night-time	Nil	Nil	14 Close

Source: Appendix D

The cumulative noise levels during calm conditions in the Murragamba locality from the Project and adjoining mining operations are below the relevant acceptable amenity criteria for industrial noise during the daytime, evening and night-time during calm conditions. Similarly, the "worst case" noise enhanced cumulative noise levels from the Project and adjoining mining operations are below the relevant maximum amenity criteria for industrial noise.

As summarised in Table ES-5, the private dwellings where noise emissions are predicted to be above Project-specific noise assessment criteria can be divided into a noise management zone (1 to 5 dBA above Project-specific criteria) and a noise affectation zone (greater than 5 dBA above Project-specific criteria). Proposed noise management procedures for these zones are detailed below.

Noise Management Zone

Depending on the degree of exceedance of the Project-specific criteria (1 dBA to 5 dBA), noise impacts could range from negligible to moderate within the noise management zone. In addition to the noise mitigation measures included in the predictive modelling, noise management procedures would include:

- noise monitoring on-site and within the community;
- prompt response to any community issues of concern;
- refinement of on-site noise mitigation measures and mine operating procedures, where practicable;
- discussions with relevant landowners to assess concerns;
- consideration of acoustical mitigation at receptors; and
- consideration of negotiated agreements with landowners.

Noise Affectation Zone

Exposure to noise levels greater than 5 dBA above the Project-specific noise criteria may be considered unacceptable by some landowners. Management procedures for noise affectation zones would include:

- discussions with relevant landowners to assess concerns and develop practical mitigation;
- implementation of acoustical mitigation at receptors (e.g. double glazing of windows); and
- negotiated agreements with landowners.

ES3.3.1 Road Transportation Noise Assessment

The primary access to the Project site would be via the mine access road connecting the mine facilities area to Wollar Road. Daytime peak Project-related traffic movements would be between 6.00 pm and 7.00 pm and the night-time peak movements would be between 6.00 am and 7.00 am.

Peak cumulative daytime levels on Wollar Road are below the 60 dBA $L_{Aeq(1hour)}$ criterion at distances of 25 m and greater from the roadway. At night-time, the peak cumulative noise level are no more than 2 dBA above the 55 dBA $L_{Aeq(1hour)}$ criterion.

ES3.3.2 Rail Transportation Noise

Product coal would be transported along the Gulgong-Sandy Hollow and Main Northern railways. Noise modelling was undertaken to assess the impact of rail noise on these railways.

The Australian Rail Track Corporation (ARTC) operates the Gulgong-Sandy Hollow and Main Northern railways. Rail noise emissions for railways operated by the ARTC are regulated via ATRC's Environmental Protection License (EPL) (3142). Within this EPL, rail noise for selected railways are regulated through a pollution reduction programme (PRP).

At present neither the Gulgong-Sandy Hollow nor Main Northern railways are the subject of a PRP. However, the stated objectives of the abovementioned PRP have been adopted as a guide to assess rail noise on the Gulgong-Sandy Hollow and Main Northern railways.

During the daytime for the Gulgong-Sandy Hollow railway, peak rail movement $L_{Aeq(15hour)}$ noise emissions would increase by between 1 dBA and 2 dBA and meet the daytime 65 dBA criterion at a distance of 30 m from the track with the addition of Project peak rail movements (i.e. 6 trains per day). At night-time, peak rail movement $L_{Aeq(9hour)}$ noise emissions would increase by between 1 dBA and 2 dBA and meet the night-time 60 dBA criterion at a distance of 80 m (and greater) with the addition of Project peak rail movements.

During the daytime for the Main Northern railway, existing noise levels would increase marginally (1 dBA to 2 dBA) and would meet the daytime 65 dBA criterion at a distance of 35 m (and greater). The night-time assessment indicates that existing noise levels would increase marginally (1 dBA) and would meet the night-time 60 dBA criterion at a distance of 90 m (and greater).

WCPL and the rail service provider would liaise with the ARTC to establish appropriate timetabling with the objective of reducing night-time train movements, particularly in relation to the Gulgong-Sandy Hollow railway.

ES3.3.3 Blast Impact Assessment

The Project open cut development would require an average of one blast per week. The DEC advocates the use of the Australian and New Zealand Environment and Conservation Council (ANZECC) guidelines for assessing potential residential disturbance (human comfort) arising from blast emissions.

The ANZECC guidelines for the control of blasting impact at a dwelling are as follows:

- The recommended maximum level for airblast is 115 linear decibels (dBL).
- The level of 115 dBL may be exceeded on up to 5% of the total number of blasts over a period of 12 months, however, the level should not exceed 120 dBL at any time.
- The recommended maximum level for ground vibration is 5 mm/s Peak Vector Sum (PVS) vibration velocity. It is recommended however that 2 mm/s PVS vibration velocity be considered as the long-term regulatory goal for the control of ground vibration.
- The PVS level of 5 mm/s may be exceeded on up to 5% of the total number of blasts over a period of 12 months, however levels should not exceed 10 mm/s at any time (at a sensitive receiver).

Australian Standard (AS) 2187.2-1993 *Explosives – Storage, Transport and Use – Use of Explosives* nominates blast vibration building damage assessment criteria which range from 5 mm/s to 25 mm/s PVS according to building type and use. The airblast criteria for building damage is 133 dBL (peak).

The blast emission assessment found that the building damage criteria of 10 mm/s and 133 dB Linear (dBL) would be met at all dwellings. Similarly, emission levels would be well below the damage criteria (5 mm/s and 133 dBL) for heritage structures.

The vibration velocities are at or below the 5 mm/s criterion at all dwellings. Incorporating blast design modifications for selected dwellings, the recommended long-term regulatory target of 2 mm/s would be achieved at all receptors except for Close (14) dwelling. Changes to the blast design to achieve the 2 mm/s criterion at Close (14) dwelling would not be practicable.

Incorporating blast design modifications for selected dwellings, the 115 dBL airblast criterion would be achieved at all receptors except for Close (14) dwelling. Changes to the blast design to achieve the airblast criterion at Close (14) dwelling would not be practicable.

Consideration of potential flyrock impacts would be incorporated into the blast design, particularly in regard to stemming length and bench spacing.

ES3.4 AIR QUALITY

Air Quality Criteria

The NSW DEC amenity criteria for dust deposition seek to limit the maximum increase in the mean annual rate of dust deposition from a new development to 2 g/m^2/month and total dust deposition to 4 g/m^2/month.

Human health effects of dust are related to exposure to suspended particulates rather than deposited dust. The effects of dust particles when inhaled are related to the types of particles inhaled, particle sizes and the ability of the respiratory tract to capture and eliminate the particles. Such particles (total suspended particulates) are typically less than 50 micrometers (µm) in size and can be as small as 0.1 µm. Fine particles less than 10 µm are referred to as PM_{10}.

Air quality criteria used in the assessment comprised the following:

- The United States (US) EPA 24 hour 150 µg/m^3 PM_{10} standard has been utilised as a target that should be met at all dwellings in the vicinity of the Project (for concentrations due to the Project and background air quality).
- The National Environment Protection Measure (NEPM) 24 hour reporting standard for PM_{10} of 50 µg/m^3 (with five exceedances allowed per year) and the DEC 24 hour PM_{10} assessment criterion of 50 µg/m^3 (for concentrations due to the Project alone).
- The DEC annual assessment criterion for PM_{10} of 30 µg/m^3 has been interpreted as a concentration that should be met within the region (concentrations due to the Project and background).
- The National Health and Medical Research Council's (NHMRC) annual goal for Total Suspended Particulate (TSP) of 90 µg/m^3 (which has been adopted by the DEC as the assessment criterion for TSP concentrations due to the Project and background air quality).

Assessment

The assessment considered the air emissions likely to be generated by the Project and the likely impact of these emissions in combination with the existing background air quality in the vicinity of the Project. Project impacts were modelled for operational Years 3, 9, 13, 14 and 21. Figures ES-7 and ES-8 show the predicted annual average dust deposition for Years 9 and 14, respectively.

The Close (14) dwelling and Power (5) (vacant land) are predicted to experience either suspended particulates or deposition levels above the DEC assessment criteria at some time over the Project life. All other receptors will remain below the relevant DEC criteria.

A range of controls based on procedures developed at contemporary NSW coal mines and techniques recommended by the NSW DEC would be employed to reduce dust emissions from the Project. Controls for mine generated dust may include watering of active roads, revegetation of topsoil stockpiles, installation and use of dust suppression equipment and confinement of blast charge.

Greenhouse Gas

The major source of Project-related emissions of greenhouse gas would be the combustion of diesel fuel (used in diesel-powered equipment and in blasting). An assessment of Project greenhouse gas emissions was conducted in accordance with the provisions of the Australian Greenhouse Office (2003). The emission estimate for the life of the Project is approximately 1.95 Million tonnes CO_2 equivalent (t CO_2-e), which equates to an average of approximately 92,800 t CO_2-e per year over 21 years.

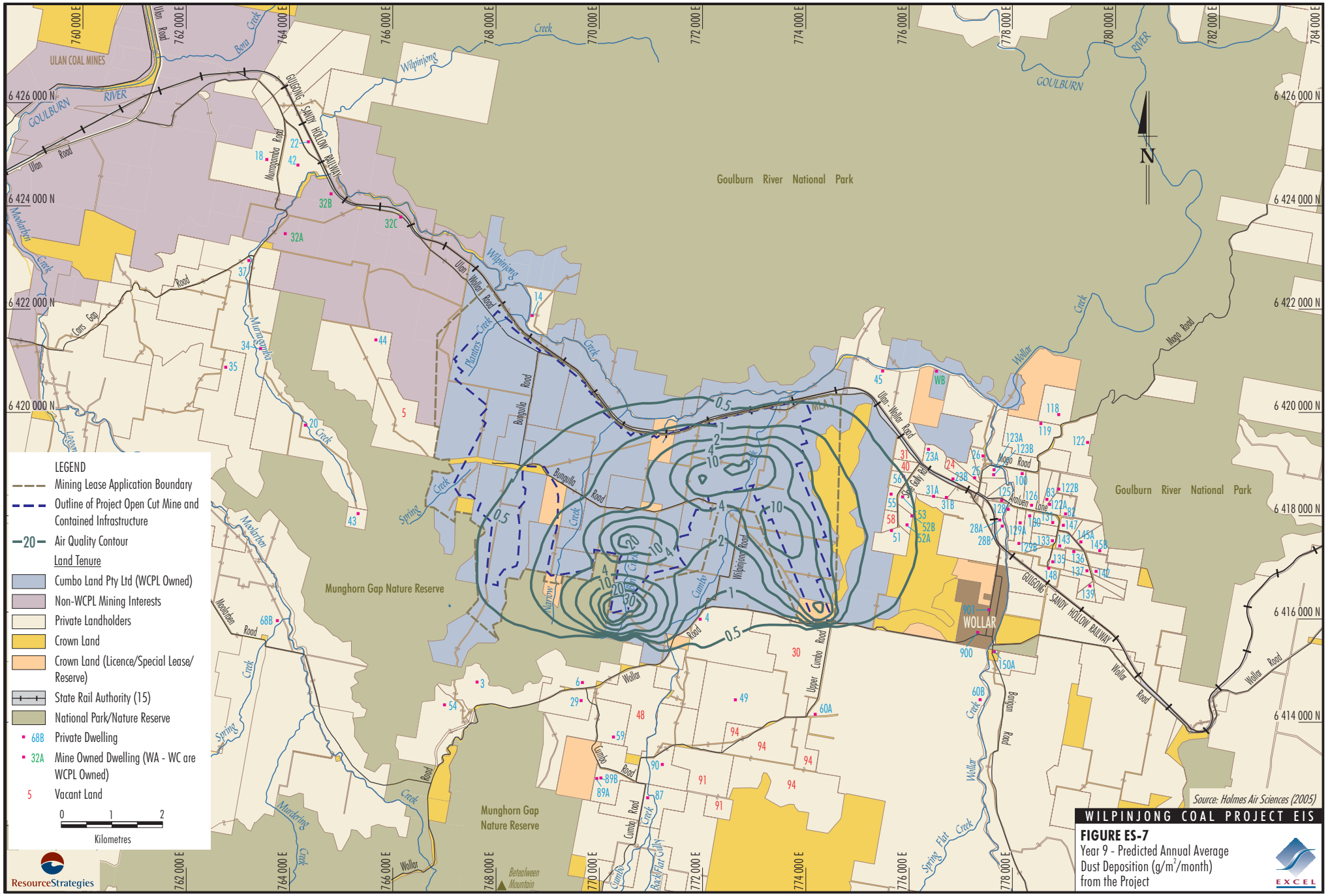

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FIGURE ES-7
Year 9 - Predicted Annual Average Dust Deposition (g/m^2/month) from the Project

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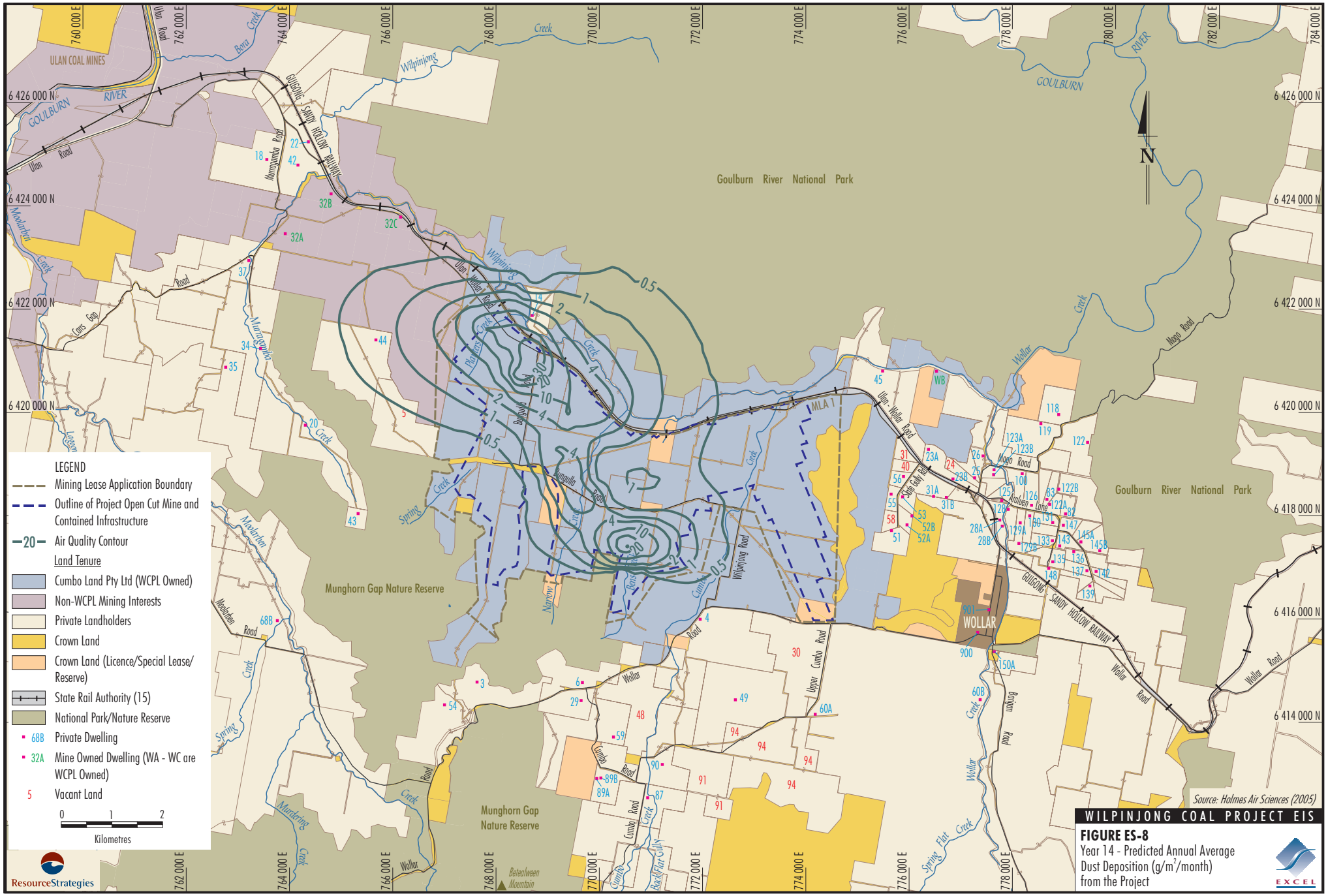

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Minimising fuel usage by mobile plant (and associated greenhouse gas emissions) is an objective of mine planning and Project cost control systems. Additional mitigation measures would include regular maintenance of plant and equipment to minimise fuel consumption and associated emissions, consideration of energy efficiency in plant and equipment selection/purchase and establishment of significant areas of woodland vegetation over the Project life.

ES3.5 FLORA AND FAUNA

ES3.5.1 Flora

The condition of native vegetation in the Project area and surrounds varies. The most disturbed areas generally occur along watercourses and on the flat and undulating areas which have been cleared for agriculture. Most natural vegetation is restricted to the steep hills and slopes outside of Project disturbance areas, with the exception of the remnant vegetation in Pit 3. There are some small uncleared areas of remnant vegetation scattered throughout the Project area and surrounds and these are mainly associated with stony outcrops.

Goulburn River National Park and Munghorn Gap Nature Reserve, situated to the north and south of the Project respectively, are listed on the Register of the National Estate (DEH, 2005).

A total of 403 plant taxa were recorded by the flora surveys, of these 298 taxa are native and 105 taxa introduced. Figure ES-9 shows the vegetation communities identified in the Project area and surrounds.

The Project disturbance area predominantly covers cleared agricultural land (mapped as vegetation community 7 on Figure ES-9). Approximately 290 ha of remnant vegetation would be cleared by the Project as follows (Figure ES-9):

- approximately 38 ha of the Yellow Box, Blakely's Red Gum Woodlands (vegetation community 1), which represents the White Box, Yellow Box, Blakely's Red Gum Woodland/Grassy White Box Woodlands (WBYBBRG) endangered ecological community (EEC);
- approximately 88 ha of Coast Grey Box Woodlands (vegetation community 2);
- approximately 63 ha of Rough-barked Apple Woodlands (vegetation community 3);
- approximately 30 ha of Narrow-leaved Ironbark Forest (vegetation community 4);
- approximately 9 ha of Grassy White Box Woodlands (vegetation community 5a), which represents the WBYBBRG EEC;
- approximately 60 ha of Shrubby White Box Woodlands (vegetation community 5b); and
- approximately 2 ha of Secondary Shrubland (vegetation community 8).

In accordance with the provisions of Section 5A of the EP&A Act, Eight Part Tests of Significance have been prepared for threatened flora species considered to possibly occur within the Project or surrounds and for the WBYBBRG EEC. Based on the information presented in the Eight Part Test, it was determined that the Project is unlikely to significantly affect any threatened flora species or the WBYBBRG EEC.

Flora Management

Mitigation measures relevant to vegetation clearance activities would include retention of existing native vegetation, avoidance of clearance (where practicable), maximising the re-use of cleared vegetative material, management of topsoil resources and implementation of a Weed and Animal Pest Control Plan.

Rehabilitation and revegetation of areas disturbed by the Project would be undertaken progressively as mining proceeds, with coal removal and the formation of final (mine waste rock emplacements) landforms behind the advancing open cut. In addition, regeneration areas would be established on areas of WCPL-owned land situated proximal to Project disturbance/rehabilitation areas.

The ECAs would be developed to help conserve regional biodiversity, whilst enhancing the habitat available to flora and fauna. The ECAs include the conservation and enhancement of areas of remnant woodland situated adjacent to Goulburn River National Park and Munghorn Gap Nature Reserve.

The ECAs are discussed in Section ES4.4.

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ES3.5.2 Terrestrial Fauna

Terrestrial fauna surveys undertaken for the Project identified a total of 174 fauna species, comprising six amphibians, 17 reptiles, 122 birds and 29 native mammals. Eleven introduced species were recorded by the surveys, including the Common Starling, House Mouse, Black Rat, Cat, Dog, Red Fox, Brown Hare, Rabbit, Goat, Feral Pig, and European Cattle.

A total of 17 threatened fauna species, listed under the Schedules of the *Threatened Species Conservation Act, 1995* (TSC Act), were recorded in the vicinity of the Project, including Black-chinned Honeyeater, Painted Honeyeater, Brown Treecreeper, Diamond Firetail, Glossy Black-cockatoo, Hooded Robin, Speckled Warbler, Square-tailed Kite, Masked Owl, Turquoise Parrot, Squirrel Glider, Yellow-bellied Sheathtail Bat, Large-eared Pied Bat, Eastern Falsistrelle, Little Bentwing Bat, Large Bentwing Bat, and East-coast Freetail Bat. The Large Bentwing Bat is listed as conservation dependent under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act). Similarly, the Large-eared Pied Bat is listed as vulnerable under the EPBC Act.

A total of 7 migratory species and a total of 40 marine species listed under the EPBC Act have been recorded in the vicinity of the Project.

Project vegetation clearance has the potential to affect fauna species through reduction in opportunities for foraging, breeding, nesting, predator avoidance and movement between areas thus promoting genetic diversity and facilitating dispersal/migration.

Other potential Project impacts on terrestrial fauna would include disruptions to routine activities as a result of increased noise levels, increased populations or concentrations of introduced species, increased incidence of fauna mortality via vehicular strike and modification of behavioural patterns as a result of Project lighting.

Eight Part Tests of Significance were completed for 36 threatened fauna species considered to possibly occur within the Project area or surrounds. Based on the information presented in the Eight Part Tests, it was determined that the Project is unlikely to significantly affect threatened fauna species.

An assessment of potential and core Koala habitat conducted for the Project concludes the study area does not fall within the definition of core Koala habitat. Therefore, the provisions of SEPP 44 (Koala Habitat Protection) do not apply.

Initiatives developed to mitigate the potential impacts of the Project on fauna include the establishment of a long-term net increase in woodland vegetation in the vicinity of the Project and the enhancement and conservation of remnant woodland, which would include the conservation of known habitat for a number of threatened fauna species including the Brown Treecreeper, Diamond Firetail, Regent Honeyeater, Hooded Robin, Yellow-bellied Sheathtail Bat, Large Bentwing Bat, Little Bentwing Bat, Large-eared Pied Bat, and East-coast Freetail Bat.

Mitigation measures relevant to vegetation clearance activities would include the development of a vegetation clearance protocol, consideration of seasonal factors to minimise disturbance to potential breeding and hibernation activities, development of fauna management strategies to minimise the impact of clearing activities on resident fauna in the short-term and minimise the impact of loss of habitat in the long-term and salvage and re-use of habitat features (e.g. large hollows) where practicable.

Other management measures would include the maintenance of a clean, rubbish-free environment to discourage scavenging and reduce the potential for colonisation by non-endemic fauna (e.g. introduced rodents), implementation of a feral animal control programme, an environmental education programme for employees and contractors and the imposition of speed limits on roads and tracks within the Project area. In addition revegetation, regeneration and the ECAs discussed in Sections ES4.2, ES4.3 and ES4.4 respectively would assist in the mitigation of impacts on native fauna.

ES3.5.3 Aquatic Ecosystems

In general, the aquatic habitats in the Project disturbance area were found to be in poor condition, which reflected the degraded nature of their immediate catchments. The banks of the creeks in the Wilpinjong area have been subject to erosion and grazing by cattle and invasion by weeds. Generally, the riparian vegetation is sparse and discontinuous.

The richness and abundance of assemblages of fish within the Project area and surrounds was quite poor with only three native species and two introduced recorded. The most numerically dominant species was the introduced Mosquito Fish which was recorded from most sites. Another introduced species, the Gold Fish was recorded from Wilpinjong Creek and Wollar Creek. Three native fish species were recorded during the survey and represented less than 6% of the total abundance of fish recorded.

Potential impacts of the Project on aquatic ecosystems would include the relocation of Cumbo Creek to enable flows from the south to continue through the Project area and into Wilpinjong Creek, construction of a low level floodway crossing to be installed across Cumbo Creek and one of its tributaries and lowering of the elevation of the groundwater table due to extraction of groundwater by mine dewatering and operation of the borefield.

Changes to surface water flows both inside and outside of the Project disturbance area have the potential to impact aquatic ecosystems. The flow of rivers and creeks is often unpredictable and highly variable and the distribution and abundance of aquatic organisms can be affected by significant changes in the intensity and pattern of flows. However, the predicted changes to low flows in Wilpinjong Creek associated with the Project are small and would not alter the physical structure of the habitats in the creek.

The small-scale predicted changes are unlikely to affect the existing aquatic ecological components.

The Ulan Seam is the main aquifer that would be affected by the Project. Groundwater quality monitoring records in the Ulan Seam indicate EC ranges from 1,020 to 3,390 µS/cm. As a result, the Ulan Seam is a significant source of the total salt load that is observed in Wilpinjong Creek, when compared to that contributed by the relatively fresher alluvial/colluvial aquifer. Therefore, any reduction in the rate of contribution that groundwater from the Ulan Seam makes to the creek baseflow would result in a corresponding reduction in the salt load in Wilpinjong and Wollar Creeks. This potential reduction in salt load described above, combined with the Project creek enhancement works would be beneficial to the aquatic assemblages of Wilpinjong and Wollar Creeks.

Management measures relevant to aquatic ecosystems would include appropriate design of the Project water management system, progressive rehabilitation of disturbance areas, scheduling of works in creeks so as to minimise the interruption of flows and fish passage and establishing riparian vegetation along Wilpinjong and Cumbo Creeks within the regeneration areas and ECAs.

ES3.6 ABORIGINAL AND NON-ABORIGINAL HERITAGE

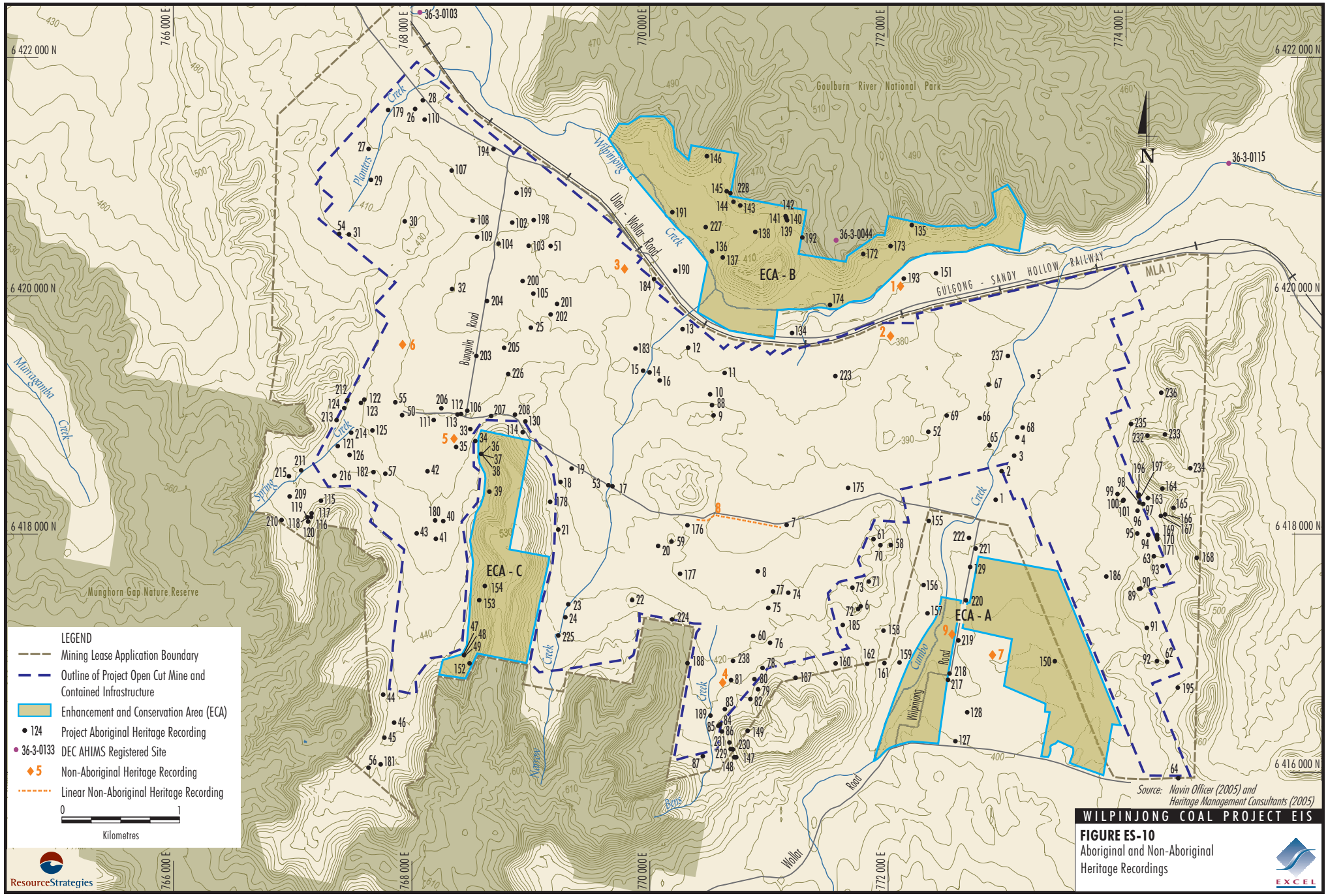
ES3.6.1 Aboriginal Cultural Heritage

A survey and assessment of Aboriginal cultural heritage within the Project area was conducted by an archaeological team and representatives of the Murong Gialinga Aboriginal and Torres Strait Islander Corporation (MGATSIC), Mudgee Local Aboriginal Land Council (MLALC) and Warrabinga Native Title Claimants Aboriginal Corporation (WBNTCAC).

Extensive consultation was undertaken with the Aboriginal community, including initial meetings to discuss the survey scope, participation in the cultural heritage surveys, provision of interim draft reports to gain feedback from the community, and further consultation to discuss management measures and future involvement in the Project.

A total of 235 recordings were made during the surveys including, isolated finds and artefact scatters in open contexts, rock shelters with potential or confirmed archaeological deposits, rock shelters with rock art, possible and probable Aboriginal scar trees, potential archaeological deposits in an open context and reported places of Aboriginal cultural significance. The locations of these sites are illustrated on Figure ES-10.

Members of all three Aboriginal groups were in agreement that three rock art sites that were identified during the Project were of high cultural value, with the larger rock art site (72) generally having more significance (Figure ES-10). All rock art sites identified are located outside the Project disturbance area.


6 422 000 N
6 420 000 N
6 418 000 N
6 416 000 N
766 000 E
768 000 E
770 000 E
772 000 E
774 000 E
N
Goulburn River National Park
Munghorn Gap Nature Reserve
ECA - A
ECA - B
ECA - C
MLA 1
GULGONG - SANDY HOLLOW RAILWAY
Ulan - Wollar Road
Bungulla Road
Wilpinjong Creek
Planers Creek
Munghorn Creek
Spring Creek
Cumbo Creek
Narrow Creek
Bens Creek
Wollar Road
36-3-0103
36-3-0115
36-3-0044
LEGEND
Mining Lease Application Boundary
Outline of Project Open Cut Mine and Contained Infrastructure
Enhancement and Conservation Area (ECA)
124 Project Aboriginal Heritage Recording
36-3-0133 DEC AHIMS Registered Site
5 Non-Aboriginal Heritage Recording
Linear Non-Aboriginal Heritage Recording
0
1
Kilometres
ResourceStrategies
Source: Navin Officer (2005) and Heritage Management Consultants (2005)
WILPINJONG COAL PROJECT EIS
FIGURE ES-10
Aboriginal and Non-Aboriginal Heritage Recordings
EXCEL

An Aboriginal Cultural Heritage Management Plan (ACHMP) would be developed in consultation with the Aboriginal community for management of Aboriginal cultural heritage at the Project and may be completed in stages as mine planning progresses. The ACHMP would include details on Aboriginal involvement in Project cultural heritage management, establishment of an Aboriginal cultural heritage liaison committee and provision of site access protocols for Aboriginal people wishing to access Aboriginal cultural heritage sites. The ACHMP would also detail salvage excavation, analysis and reporting for selected sites/areas prior to disturbance and a 'Keeping Place' for storing Aboriginal objects collected during salvage. Collected Aboriginal objects would be replaced in the landscape once final rehabilitation works are completed.

Additional management measures would include baseline recording and blast vibration and dust monitoring at the rock shelters with rock art (Sites 72, 152, and 153) and conduct of further archaeological survey on slopes up to and including the escarpments within 500 m of the open cut mining area to identify any additional sites that are outside of the Project disturbance areas.

ES3.6.2 Non-Aboriginal Heritage

Some 41 structures and sites were identified in the Project area and surrounds, of which 21 were of some historical interest and nine were considered of local heritage significance. No sites of higher heritage significance (regional or state) were identified.

Two of the local heritage sites identified during the survey "*Cumbo Creek*" and "*Keylah*" are to be demolished in accordance with a pre-existing development approval from the Mid-Western Regional Council. The buildings have been photographically recorded in accordance with Heritage Office guidelines and materials from the buildings will be salvaged by local landholders for re-use.

Nine non-Aboriginal heritage items that are considered of local heritage significance were identified in the Project area and surrounds. No sites of higher (regional or state) heritage significance were identified.

Buildings of local significance that were identified within the open cut mining operations area are "Warrawong", "Hillside", Atcheson's Cottage and Loys Cottage. The latter three sites are in poor or ruined condition. Also in poor condition, a post and rail fence which extends the majority of the distance across the rail loop to the edge of Pit 1 would be disturbed by construction activities.

One heritage site (Wilpinjong Road Stone Embankment) is located on the existing alignment of Wilpinjong Road. During the mine access road detailed design, this site would be identified and avoided by a minor road deviation.

All the heritage sites that are considered to be of local heritage significance have been recorded to an archival standard (written description, plans and detailed photographic record) and the records will be provided to the Mudgee Historical Society.

When "Warrawong" and "Hillside" need to be demolished for mining, materials such as stone and wooden slabs would be offered to local landowners or the Mudgee Historical Society for conservation or re-use.

ES3.7 TRANSPORT

ES3.7.1 Road Transport

The primary access to the Project would be provided from the south via the mine access road. An existing access track and road-rail crossing from the north off Ulan-Wollar Road would also be temporarily used during the construction phase and would be closed following decommissioning of the construction camp.

Construction of the Project would be undertaken up to seven days per week between the hours of 7.00 am and 6.00 pm, during which predicted traffic generation would comprise both light vehicles and small truck/heavy vehicle movements associated with deliveries and services and a small number of overwidth, overheight or overweight loads.

During the operational phase, lower levels of employment would result in lower light vehicle traffic movements but a more concentrated distribution of Project traffic to and from Mudgee on Wollar Road/Ulan Road. Examination of peak hour movements at the Wollar Road/mine access road intersection and the major intersections on the route to the site from Mudgee indicate that critical intersections would continue to operate effectively with minimal delays during peak hour periods.

The mine access road would be designed to comply with the *Rural Road Design – Guide to Geometric Design of Rural Roads* (Austroads, 1993). Alignment of the intersection of the mine access road (ie. formerly Wilpinjong Road) with Wollar Road would be designed to improve visibility. WCPL would encourage car pooling to minimise Project traffic generation during the life of the Project.

For periods when mine blasting is undertaken within 500 m of Ulan-Wollar Road or Wollar Road, temporary closure of these roads for short periods would be required while blasting is undertaken. Blasting-related road closures would be conducted in accordance with the RTA *Traffic Control at Worksites Manual* (RTA, 2003).

WCPL does not propose to haul coal along public roads. All coal would be hauled on internal roads on WCPL-owned land and transported externally by rail.

ES3.7.2 Rail Transport

Product coal would be transported by rail to either the Bayswater/Liddell rail unloader or the Port of Newcastle located approximately 155 km and 260 km, respectively from the Project rail loop. Product coal would be transported via the Gulgong-Sandy Hollow railway, which adjoins the Merriwa railway, which in-turn adjoins the Main Northern railway. An average of four Project trains would be loaded each day.

The *Hunter Valley Capacity Improvement Strategy* (ARTC, 2005) five year plan for the Hunter Valley rail corridor makes specific reference to the Project in regards to the potential increase in train movements along the Gulgong-Sandy Hollow railway and the Main Northern railway. The strategy outlines the infrastructure improvements and the timing necessary to accommodate Project trains and additional demand from other projects in the region. Hence, the ARTC has considered the Project in its five year infrastructure improvements plan and it is understood that the relevant railways would have sufficient capacity to accommodate Project trains.

When mine blasting is undertaken within 500 m of the Gulgong-Sandy Hollow railway, temporary closure of the railway, for short periods would be required. These temporary closures would be conducted in consultation with the ARTC.

ES3.8 COMMUNITY INFRASTRUCTURE

A Community Infrastructure Assessment conducted for the Project addressed potential impacts on housing, education facilities and community services as well as potential direct and indirect impacts on employment and population.

For the construction phase of the Project, it is anticipated that 200 people would be employed on average over a 6 month period. A significant proportion of the construction workforce would be sourced from the local region.

The construction camp would accommodate the majority of the non-local workforce and as a result, the predicted impact of the construction phase on local populations and housing demand, and education facilities is expected to be relatively minor.

Flow-on employment generation resulting from the Project has been estimated at 1.5 times direct Project employment levels in the local region. Of these additional full-time jobs, it is assumed that approximately 30% would be filled by people who originate from outside the local region. The total population effects of the Project have therefore been calculated to range from 193 to 312 people for the average and peak employment scenarios respectively.

It is estimated that approximately 80% and 10% of the workforce would settle in Mudgee and Gulgong respectively, where community infrastructure such as education, health and other community services and recreational services generally have sufficient excess capacity to accommodate the increase in population and housing/land demand that would be caused by the Project.

Notwithstanding, existing shortages in General Practitioners and childcare places may be exacerbated by the moderate increase in population associated with the Project. Community organisations and support services are expected to experience a negligible impact as a result of the moderate population increases in the local region.

ES3.9 BENEFIT COST ANALYSIS AND REGIONAL ECONOMIC IMPACT ASSESSMENT

Economic analysis is primarily concerned with weighing up the potential economic costs and benefits of a project to the community (i.e. consideration of economic efficiency).

The primary technique used to evaluate proposals with respect to economic efficiency is a benefit cost analysis. As part of the Economic Assessment, a benefit cost analysis was performed for the Project. Information on the regional economic impact or economic activity generated by development proposals is also of interest to decision-makers. A regional economic impact analysis that considers the likely contribution of the Project to annual direct and indirect output, value-added, income and employment was also undertaken.

The regional impact assessment considers the impact of the Project on the regional economy (former LGAs of Mudgee, Merriwa and Rylstone) and on the State of NSW.

A benefit cost analysis of the Project identified a range of potential economic costs and benefits, including possible external environmental impacts. The main potential economic costs of the Project relate to the opportunity cost of land and capital equipment, the capital cost of mine and infrastructure establishment and annual operating costs. The main economic benefits relate to the sale of product coal and the residual value of capital equipment and land at the completion of the evaluation period.

The main decision criterion for assessing the economic desirability of a proposal is usually the Net Present Value (NPV), where a positive NPV indicates that it would be desirable from an economic perspective for society to allocate resources to a project, because the community would obtain net benefits. The analysis indicated that the Project would result in incremental production benefits of approximately $1,454 million (M) accruing to Australia. This figure represents the opportunity cost to Australian society of not proceeding with the proposal. Interpreted another way, any residual environmental impacts from the proposal, after mitigation by WCPL, would need to be valued at greater than $1,454M to make the proposal questionable from an economic efficiency perspective.

Regional economic impact assessment is primarily concerned with the effect of an impacting agent on an economy in terms of specific indicators, such as employment, income, gross regional product and gross regional output.

The construction and operation of the Project would stimulate demand in the local and regional economy leading to increased business turnover in a range of sectors and increased employment opportunities. Cessation of the Project would, however, lead to a reduction in economic activity.

WCPL would develop a Mine Closure Plan before mine closure in consultation with regulatory agencies and would include consideration of the potential impacts of reductions in employment that would occur at the end of the Project life.

ES3.10 HAZARD AND RISK

A Preliminary Hazard Analysis (PHA) was conducted to gain an understanding of the potential hazards and risks associated with the Project. The PHA was conducted in accordance with the general principles of risk evaluation and assessment provided in the DIPNR guidelines for *Multi-Level Risk Assessment* (DUAP, 1999).

Potentially hazardous materials required for the Project are generally limited to explosives, diesel, petrol and hydrocarbons. Risks posed by the usage of these materials for the Project would include transport, handling and consumption.

The potential risks identified in the PHA related to Project elements/activities including diesel, explosive, petrol and hydrocarbon consumption and storage facilities, general operations (including construction activities), open cut operations, CHPP, transport of general or potentially hazardous goods and rail loop operations.

The assessment evaluates the risk of the Project impacting on the environment, members of the public and their property. Preventative measures have been proposed, where required, to produce a low level of risk in accordance with the risk acceptance criteria.

ES4 ENVIRONMENTAL PROTECTION PLAN

The Environmental Protection Plan (EPP) provides for environmental management of the Project area and surrounds, the rehabilitation of Project disturbance areas and the establishment, enhancement and conservation of areas of woodland vegetation. The Project EPP has been developed with due recognition of relevant state government discussion papers including the *Green Offsets for Sustainable Development* (NSW Government, 2002).

ES4.1 ENVIRONMENTAL MANAGEMENT AND MONITORING

The management and monitoring programmes are considered provisional pending further input from relevant authorities during the assessment phase of the EIS.

As part of the Mining, Rehabilitation and Environmental Management Process (MREMP) (DMR, 2002), a Mining Operations Plan (MOP) and an Annual Environmental Management Report (AEMR) would be developed in consultation with relevant authorities.

The MOP would provide information in regard to mining, processing and rehabilitation operations, relevant lease and development consent conditions, licences and other approvals.

Each AEMR would describe the status of approvals, leases, licences and environmental risk management and control strategies as well as a summary of community consultation, mining operation and rehabilitation and ECA progress for the previous 12 months.

Each AEMR would also include a review and any proposed changes in relation to environmental monitoring and management systems, environmental performance and completion criteria and would specify environmental, rehabilitation, regeneration and ECA objectives to be achieved during the ensuing 12 month period.

ES4.1.1 Environmental Management Plans

An Environmental Management Strategy and a number of environmental management plans would be developed for the Project. Management plans would be progressively prepared, prior to and/or during the development of the Project, so they can be implemented prior to a relevant action taking place.

Proposed environmental management plans for the Project include Land Management Plan, Erosion and Sediment Control Plan, Bushfire Management Plan, Site Water Management Plan, Water Supply Borefield Plan, Cumbo Creek Relocation Plan, Flora and Fauna Management Plan, Weed and Animal Pest Control Plan, Traffic Management Plan, Aboriginal Cultural Heritage Management Plan, Spontaneous Combustion Management Plan and Blast Management Plan.

ES4.1.2 Environmental Monitoring

An environmental monitoring programme would be developed for the Project. The results of the monitoring programme would be reported in the AEMR. Monitoring locations, parameters and frequencies would be reviewed annually through the AEMR process, in consultation with relevant authorities and the Project CCC. A range of parameters would be monitored within the following categories:

- meteorology;
- air quality;
- noise;
- blasting;
- erosion and sediment control;
- surface water;
- groundwater;
- aquatic biology;
- weeds and animal pests; and
- traffic flows.

ES4.2 REHABILITATION AREAS

The principles and objectives relating to Project rehabilitation planning and design would include integration of open cut mining and rehabilitation planning to minimise the area of disturbance at any one time, progressive rehabilitation of disturbed areas, consideration of public safety issues and consultation with relevant authorities.

Rehabilitation objectives for the Project are as follows:

- To create safe, stable, adequately drained post-mining landforms that are consistent with the local surrounding landscape.
- To produce a net increase in woodland vegetation.

- To increase the continuity of woodland vegetation by establishing links between woodland vegetation in the rehabilitation areas, regeneration areas and existing remnant vegetation in the Munghorn Gap Nature Reserve, Goulburn River National Park and ECAs.
- To preserve the existing beneficial use of water resources.

Key activities of the rehabilitation programme would include planning, erosion and sediment control, soil removal, handling and replacement, revegetation, replacement of Aboriginal objects, studies and trials, final landform design and monitoring, maintenance and reporting.

Figure ES-11 illustrates the revegetation concepts for the final landforms. The revegetation concepts propose a balanced outcome recognising the alternative landuses that exist in the region, with the aim of establishing the potential for both sustainable agriculture and areas of woodland vegetation.

ES4.3 REGENERATION AREAS

Regeneration areas would be established on areas of WCPL-owned land situated proximal to the Project disturbance areas/rehabilitation areas as shown on Figure ES-11. These areas contain predominantly cleared agricultural land. Woodland vegetation would be established in the regeneration areas through natural regeneration and selective planting.

Some 350 ha of woodland vegetation would be established in the regeneration areas over the long-term, and in association with the revegetation of Project disturbance areas and the establishment of woodland vegetation in the ECAs (Section ES4.4), would contribute to the overall net increase in woodland vegetation of some 1,095 ha.

ES4.4 ENHANCEMENT AND CONSERVATION AREAS

Three areas covering a total area of approximately 480 ha have been identified to be included in the ECAs (Figure ES-11). The ECAs would be managed to enhance and conserve remnant vegetation (and associated flora and fauna habitat) and Aboriginal cultural heritage.

The Aboriginal cultural heritage survey conducted within the ECAs has demonstrated that ECA-B and ECA-C contain Aboriginal archaeological sites of conservation value. In addition, ECA-A includes an area of the Cumbo Creek riparian corridor that is expected to have potential to contain large artefact scatters and *in-situ* deposits. The local Aboriginal community believe these areas provide a valuable opportunity to conserve a sample of sites from the Project area. Management of Aboriginal cultural heritage sites in the ECAs would be detailed in the AHCMP.

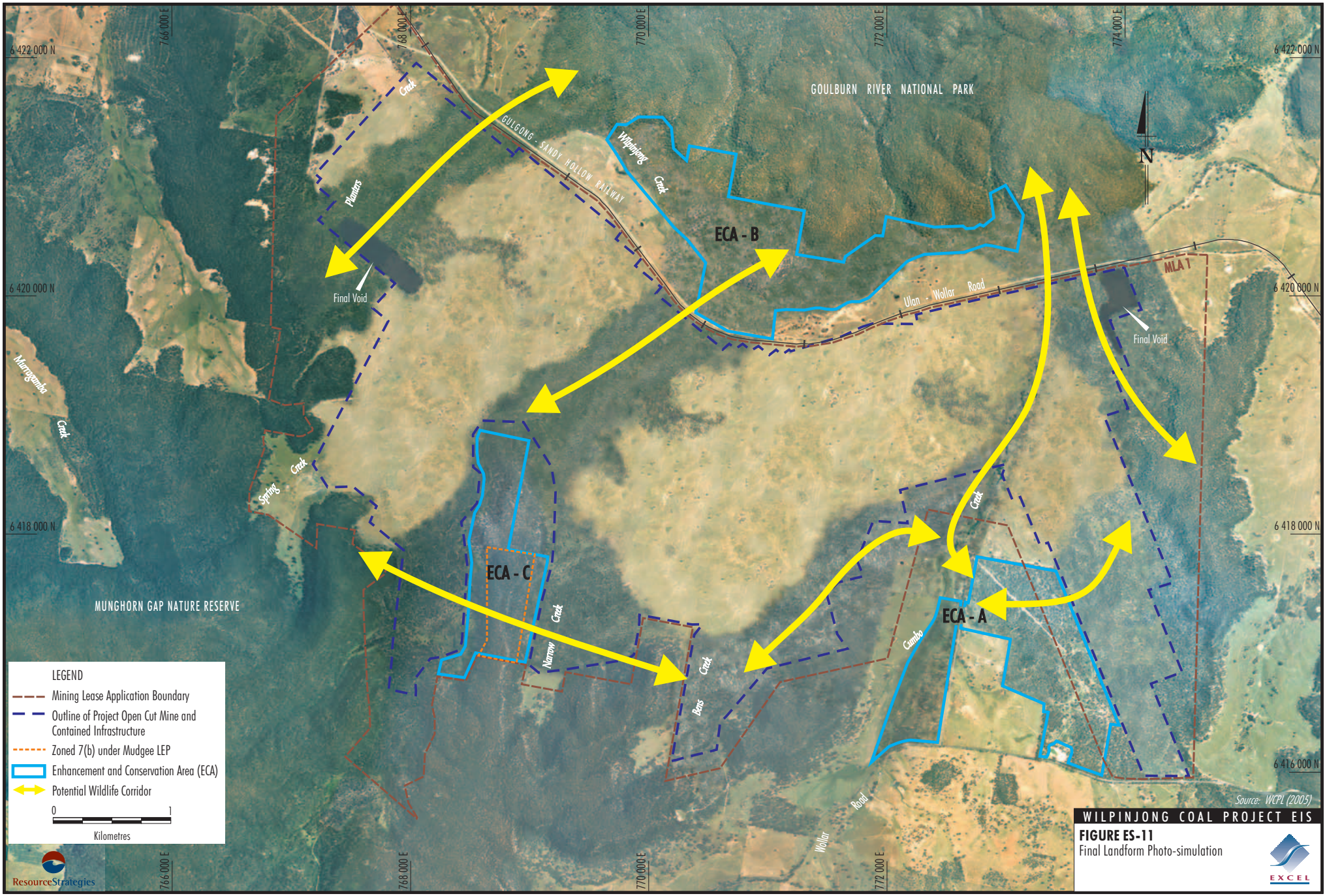
The general flora and fauna attributes of the ECAs would include the enhancement and conservation of some 295 ha of existing remnants (including known habitat for threatened fauna), establishment of woodland vegetation through natural regeneration/ selective planting within areas of predominantly cleared grazing land (some 185 ha) and the opportunity to establish some 50 ha of the WBYBBRG EEC in the areas comprising cleared grazing land. Other attributes would include the opportunity to establish riparian vegetation along Wilpinjong and Cumbo Creeks through natural regeneration/selective planting and the enhancement and conservation of similar landforms to those represented within the Project disturbance area.

The establishment and management of the ECAs would be documented in the FFMP.

'Enhancement' of the ECAs would be achieved by the implementation of appropriate land management practices such as weed and animal pest control, management of livestock access to encourage natural regeneration, and selective planting.

'Conservation' of the ECAs would be achieved through a rezoning application.

A monitoring programme would be developed for the ECAs to monitor the effectiveness of the enhancement measures. The monitoring programme would be detailed in the FFMP.



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ES4.5 MINE CLOSURE AND LEASE RELINQUISHMENT

Prior to the completion of Project mining operations, a Mine Closure Plan (MCP) would be developed and would document the final mine closure process, final rehabilitation works and post-closure maintenance and monitoring requirements appropriate to established completion criteria. The MCP would include a Final Void Management Plan which would address issues such as the predicted hydrological behaviour of the final voids, groundwater and surface water management, long-term geotechnical stability of the voids, public safety, access requirements and water quality monitoring requirements.

Upon cessation of mining operations, it would be expected that tenure of the mining lease would be maintained by WCPL until such time as the relevant completion criteria are achieved along with any relevant statutory requirements (e.g. fulfilment of mining lease conditions). WCPL would then seek to relinquish the Project mining lease.