

Stratford Extension Project Environmental Impact Statement



SECTION 1

INTRODUCTION

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1 INTRODUCTION

This document is an Environmental Impact Statement (EIS) for the Stratford Extension Project (herein referred to as the Project). The Project provides for the continuation and extension of open cut coal mining and processing activities at the Stratford Coal Mine (SCM) and Bowens Road North Open Cut (BRNOC) (both mines are referred to collectively as the Stratford Mining Complex).

The Stratford Mining Complex is an open cut coal operation located approximately 100 kilometres (km) north of Newcastle, New South Wales (NSW) in the Gloucester Basin (Figure 1-1).

Stratford Coal Pty Ltd (SCPL) is the owner and operator of the Stratford Mining Complex. SCPL is a wholly owned subsidiary of Yancoal Australia Limited (Yancoal).¹

The nearby Duralie Coal Mine (DCM) is also owned by Yancoal and is located approximately 20 km south of the Stratford Mining Complex (Figure 1-1). The Stratford Mining Complex and DCM collectively comprise Yancoal's Gloucester Basin operations.

1.1 PROJECT OVERVIEW

1.1.1 Purpose of this Report

This EIS has been prepared to accompany a Development Application made for the Project in accordance with Division 4.1 of Part 4 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act).

This EIS considers the potential environmental impacts of the Project in accordance with the Director-General's Requirements (DGRs) issued by the NSW Department of Planning and Infrastructure (DP&I) on 14 December 2011 (Attachment 1) and clauses 6 and 7 of Schedule 2 of the NSW *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation).

The DGRs were issued in accordance with the requirements of clause 3 of Schedule 2 of the EP&A Regulation. A summary of the DGRs is provided in Section 1.2.

¹ On Thursday 28 June 2012, Yancoal Australia Limited was listed on the Australian Stock Exchange and merged with Gloucester Coal Ltd (GCL) under a scheme of agreement on the same date. SCPL is now a wholly owned subsidiary of Yancoal Australia Limited. Any reference to GCL in the remainder of this EIS and all its Appendices should be read as Yancoal Australia Limited.

1.1.2 Background

The current mining activities at the Stratford Mining Complex include coal extraction from the existing SCM and BRNOC open cut mining operations. The extracted coal is processed in an existing Coal Handling and Preparation Plant (CHPP) at the SCM.

The CHPP also processes run-of-mine (ROM) coal transported from the DCM on the North Coast Railway and small quantities of CHPP rejects recovered by excavation from the western co-disposal area at the SCM.

Blended coal products are transported by rail to the Port of Newcastle for export, and to domestic customers.

The locations of the existing operations at the SCM and BRNOC are shown on Figure 1-2. A description of the existing SCM and BRNOC operations and history of approvals is provided in Sections 2.1 and 2.2, respectively.

SCPL is seeking approval from the NSW Minister for Planning and Infrastructure for a new Development Consent under Division 4.1 of Part 4 of the EP&A Act for the Project which would consolidate and replace the existing Development Consents (DA 23-98/99 and DA 39-02-01) for the SCM and BRNOC, respectively.

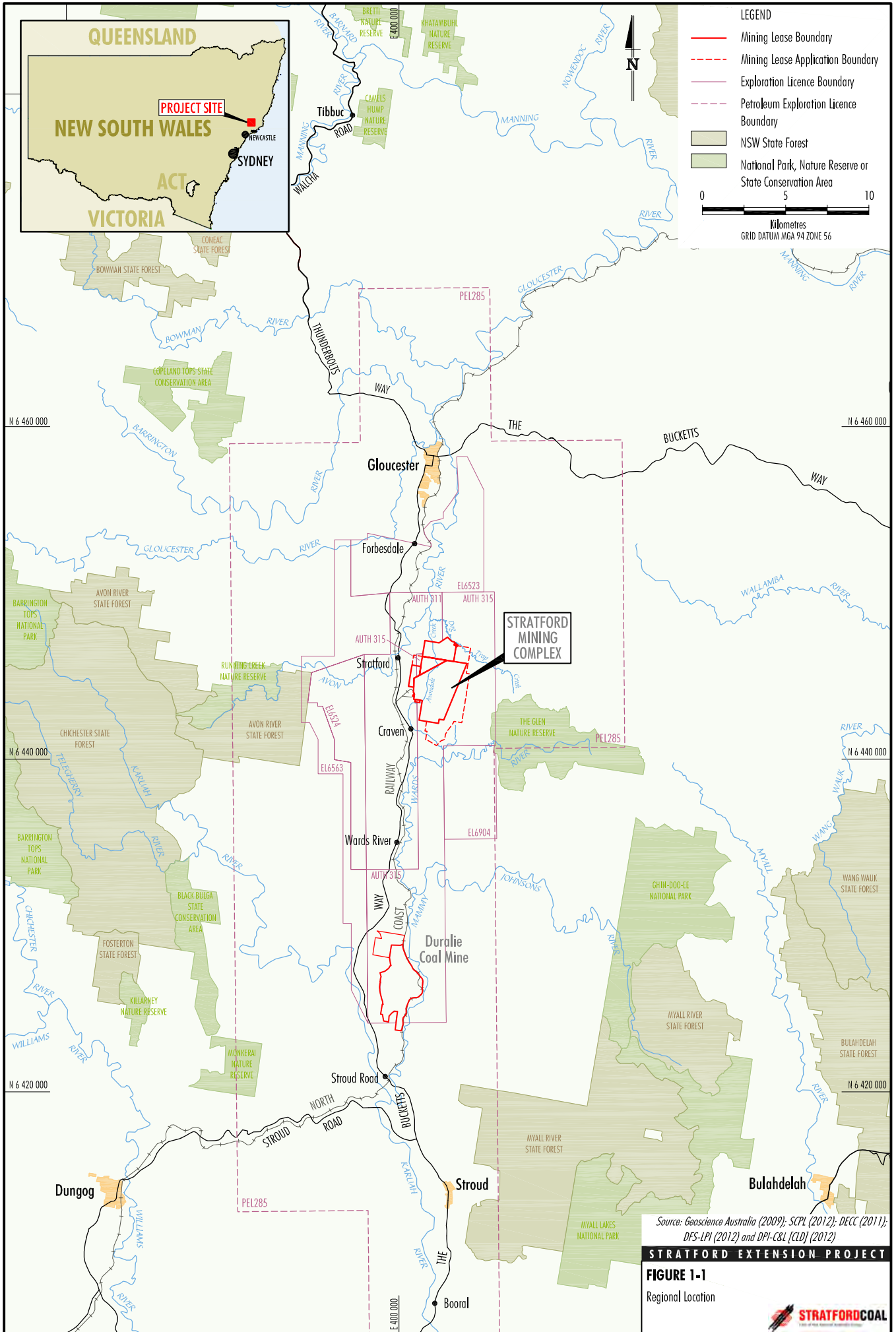
1.1.3 Project Summary

The proposed life of the Project is 11 years, commencing approximately 1 July 2013, or when all necessary approvals are in place (both State and Commonwealth).

Table 1-1 provides a summary comparison of the existing Stratford Mining Complex and the Project components.

The main activities associated with the development of the Project would include:

- ROM coal production rate of up to 2.6 million tonnes per annum (Mtpa), including mining operations associated with:
 - completion of the BRNOC;
 - extension of the existing Roseville West Pit; and
 - development of the new Avon North and Stratford East Open Cuts;
- exploration activities;



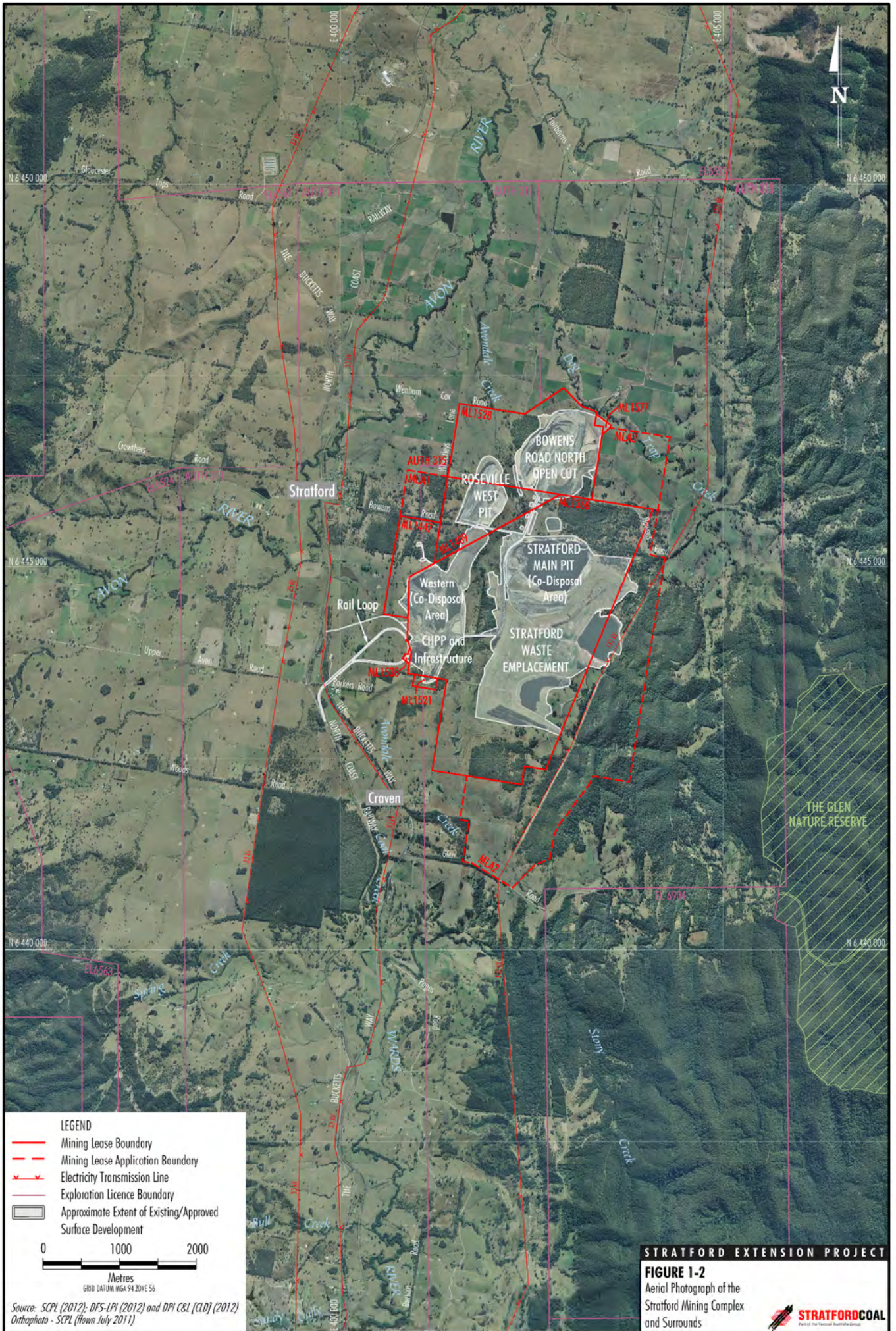
Source: Geoscience Australia (2009); SCPL (2012); DECC (2011); DFS-LPI (2012) and DPI-CSL [CLD] (2012)

STRATFORD EXTENSION PROJECT

FIGURE 1-1

Regional Location





**Table 1-1
Project Summary**

Project Component	Summary of Existing/Approved Stratford Mining Complex	Summary of the Project
ROM Coal Production	<ul style="list-style-type: none"> ROM coal production of up to approximately 2.1 Mtpa (SCM). ROM coal production of up to approximately 1 Mtpa (BRNOC). 	<ul style="list-style-type: none"> Total ROM coal production of up to approximately 2.6 Mtpa.
Mine Life	<ul style="list-style-type: none"> Mining operations to end of 2013. Processing of ROM coal and export of product coal to 2019. 	<ul style="list-style-type: none"> Additional 11 years of mining to approximately 2024. Additional 5 years of processing and export of product coal to approximately 2024.
Hours of operation	<ul style="list-style-type: none"> Open cut mining at the Stratford Mining Complex is currently undertaken seven days per week from 7.00 am to 10.00 pm (SCM) and 7.00 am to 7.00 pm (BRNOC). The handling and processing of ROM coal at the CHPP is approved to operate 24 hours per day, seven days per week. The unloading of ROM coal from the Duralie Shuttle Train is currently conducted between 7.00 am and 10.00 pm¹. 	<ul style="list-style-type: none"> Open cut mining at the Stratford Mining Complex would be undertaken seven days per week during the periods specified below (except in the case of an emergency): <ul style="list-style-type: none"> 7.00 am to 7.00 pm (BRNOC); 7.00 am to 6.00 pm (Roseville West Pit Extension); 24 hours (Avon North Open Cut); and 24 hours (Stratford East Open Cut²). Recovery of CHPP rejects for re-processing would be undertaken between 7.00 am to 6.00 pm. No change to CHPP hours of operation. No change to rail hours of operation unless separate approval¹ is obtained.
Waste Rock Emplacement (including backfill)	<ul style="list-style-type: none"> Combination of in-pit (including backfill) and out-of-pit waste rock emplacement. 	<ul style="list-style-type: none"> Continued and expanded placement of mine waste rock to in-pit (including backfill) and out-of-pit waste rock emplacements including: <ul style="list-style-type: none"> extension of the Stratford Waste Emplacement and increase in height to approximately 196 metres (m) Australian Height Datum (AHD); and extension of the Northern Waste Emplacement and increase in height to approximately 165 m AHD.
General Infrastructure	<ul style="list-style-type: none"> Access roads, electricity supply and distribution, rail loop, CHPP, train loading and unloading infrastructure, ROM coal stockpiles, coal handling equipment, diesel storage, administration, workshop, stores and ablution buildings, heavy vehicle servicing, parking and washdown facilities. 	<ul style="list-style-type: none"> Continued use of existing approved infrastructure and minor modifications as required. Realignment of a 132 kilovolt (kV) power line. Realignments of Wheatleys Lane, Bowens Road, and Wenhams Cox/Bowens Road.
Product Coal Trains	<ul style="list-style-type: none"> Average of 2.5 product coal trains per day. Up to five product coal trains per day would be required during peak periods. 	<ul style="list-style-type: none"> Average of 2.5 product coal trains per day. Up to six product coal trains per day would be required during peak periods.
Water Supply	<ul style="list-style-type: none"> Mine water supply obtained from runoff recovered from mine operational areas, waste rock emplacements, CHPP rejects co-disposal areas (i.e. Stratford Main Pit) and open pit dewatering. 	<ul style="list-style-type: none"> No change to key sources of water supply.
Water Management	<ul style="list-style-type: none"> On-site water management system comprising water management storages and collection drains, runoff diversions, sediment control, and irrigation of water from the Stratford East Dam on rehabilitated waste rock emplacements that drain directly to mine water storages. 	<ul style="list-style-type: none"> Project water management system would generally be based on the existing water management system with progressive augmentation during the life of the Project. Design and operate a water management system such that there is no contained water storage overflow. Development of up-catchment diversion systems in advance of open cut operations.
Operational Workforce	<ul style="list-style-type: none"> Approximately 125 people (including Yancoal staff and on-site contractor's personnel) are employed at the Stratford Mining Complex. 	<ul style="list-style-type: none"> At full development, the Project operational workforce would be in the order of approximately 250 on-site personnel. Construction/development activities during the life of the Project would require up to approximately 30 additional people for short periods.

¹ Yancoal is currently seeking separate approval to extend the Duralie Shuttle Train paths to 1.00 am (i.e. 6.00 am to 1.00 am).

² Waste rock mining fleet in Stratford East Open Cut during Years 1 to 5 would generally be limited to 7.00 am to 6.00 pm, and would only occur outside of these hours subject to compliance with noise limits. Coal mining fleet would operate 24 hours per day.

- progressive backfilling of mine voids with waste rock behind the advancing open cut mining operations;
- continued and expanded placement of waste rock in the Stratford Waste Emplacement and Northern Waste Emplacement;
- progressive development of new haul roads and internal roads;
- coal processing at the existing CHPP including Project ROM coal, sized ROM coal received and unloaded from the DCM and material recovered periodically from the western co-disposal area;
- stockpiling and loading of product coal to trains for transport on the North Coast Railway to Newcastle;
- disposal of CHPP rejects via pipeline to the existing co-disposal area in the Stratford Main Pit and, later in the Project life, the Avon North Open Cut void;
- realignments of Wheatleys Lane, Bowens Road, and Wenhams Cox/Bowens Road;
- realignment of a 132 kV power line for the Stratford East Open Cut;
- continued use of existing contained water storages/dams and progressive development of additional sediment dams, pumps, pipelines, irrigation infrastructure and other water management equipment and structures;
- development of soil stockpiles, laydown areas and gravel/borrow areas;
- monitoring and rehabilitation;
- all activities approved under DA 23-98/99 and DA 39-02-01; and
- other associated minor infrastructure, plant, equipment and activities and minor modifications to existing structure, plant and equipment and activities.

1.1.4 Site Location and Tenure

Seven mining leases (MLs) cover the operations at the Stratford Mining Complex (i.e. ML 1577, ML 1528, ML 1409, ML 1447, ML 1360, ML 1538 and ML 1521) (Figure 1-2). The Project would extend into three new Mining Lease Application (MLA) areas (MLA 1, MLA 2 and MLA 3) (Figure 1-3a).

With the exception of existing road reserves, the existing MLs and proposed MLAs exist wholly within land owned by Yancoal.

SCPL will lodge MLAs separately to the Division of Resources and Energy (DRE) (within the NSW Department of Trade and Investment, Regional Infrastructure and Services [DTIRIS]) for Project development areas outside of the existing MLs.

Alternatively, one MLA may be lodged to consolidate the existing MLs and additional MLA areas for the Project, and would be undertaken in consultation with the DRE.

Yancoal will also continue to apply for and renew existing exploration authorisations (AUTHs) and exploration licences (ELs) (i.e. AUTH 311, AUTH 315 and EL 6904) with the DRE as required.

The Development Application area includes those lands listed in the real property descriptions provided in support of the Development Application submitted to the DP&I (Attachment 2). Relevant land ownership information for parcels of land within the immediate vicinity of the Project is provided on Figures 1-3a to 1-3c.

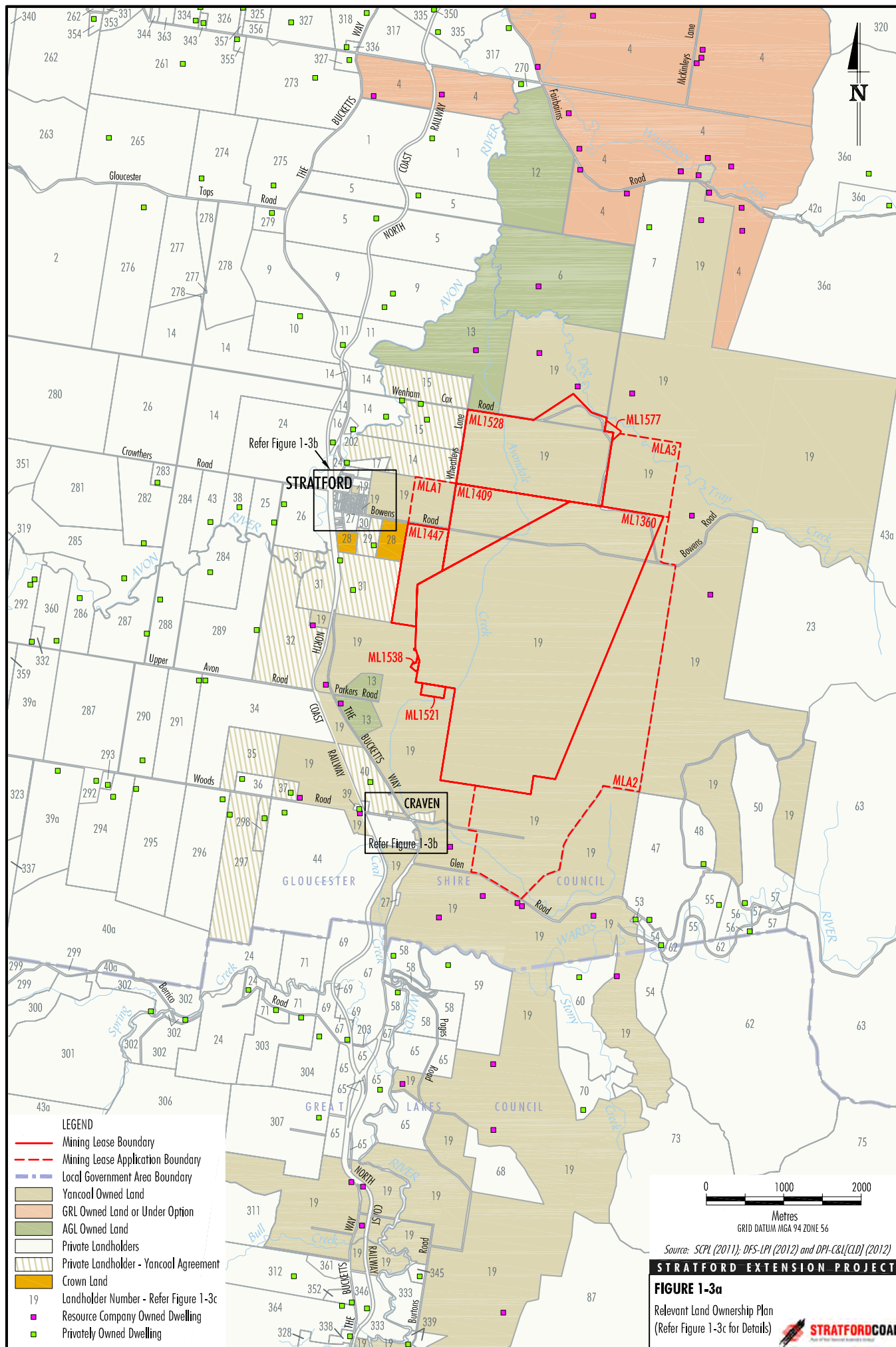
The Development Application area is within the Gloucester Local Government Area (LGA) (Figure 1-3a). A description of the land zoning under the *Gloucester Local Environmental Plan 2010* (Gloucester LEP) in the Development Application area is provided in Section 6 and Attachment 6.

1.1.5 Interaction with other Operations, Activities and Infrastructure Projects in the Vicinity of the Site

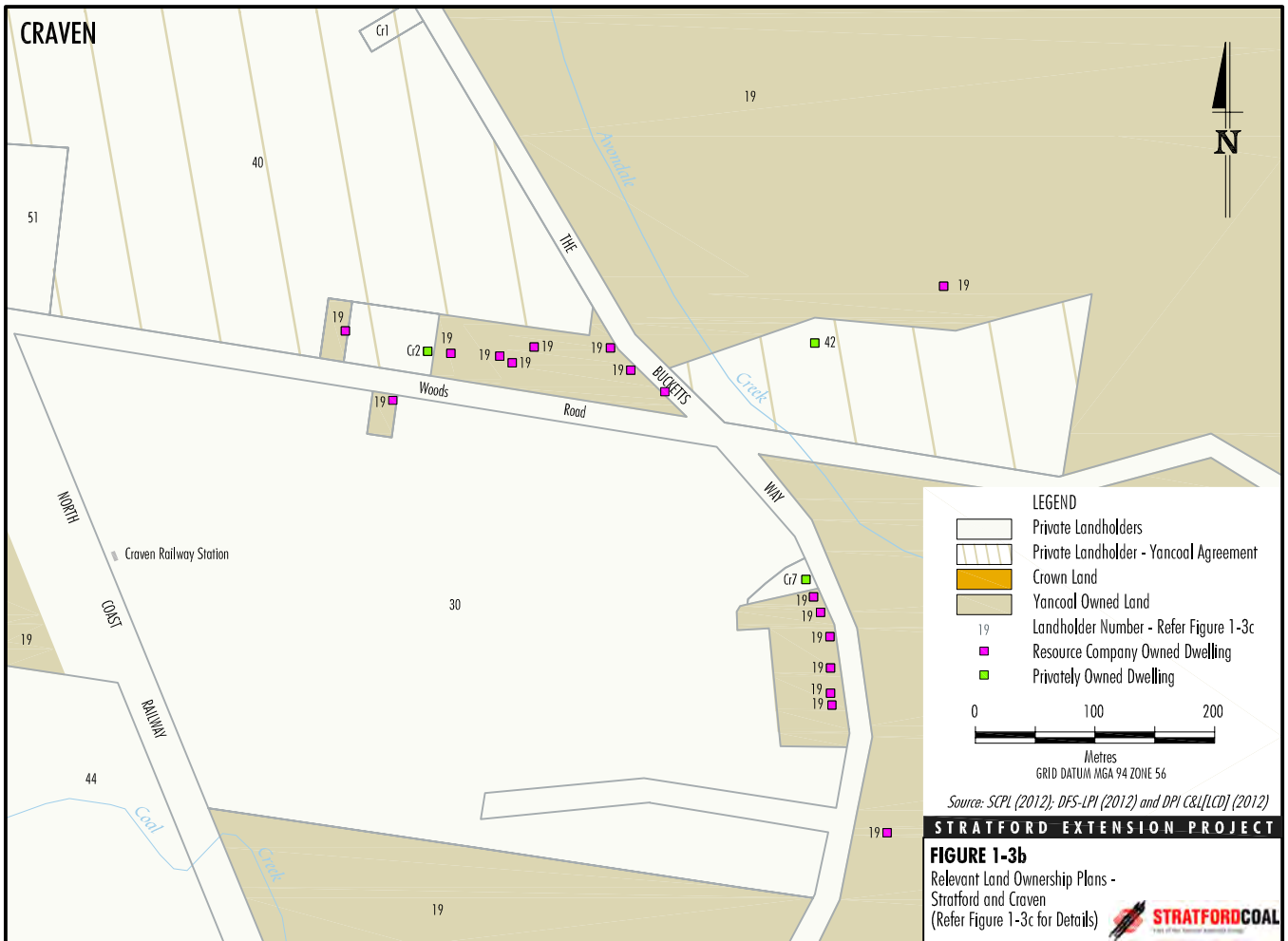
Existing and proposed coal mining and processing operations as well as coal seam gas (CSG) development, exploration activities and public infrastructure projects in the vicinity of the Stratford Mining Complex that may potentially interact with the Project include:

- AGL Gloucester LE Pty Ltd (AGL)'s Gloucester Gas Project;
- exploration activities undertaken by Gloucester Resources Limited (GRL), AGL and Yancoal;
- GRL's proposed Rocky Hill Coal Project;
- the existing DCM (owned by Yancoal); and
- Stroud to Lansdowne 330 kV Power Line Project.

Descriptions of Project potential interactions and potential cumulative impacts with these and other operations, activities and infrastructure of relevance are provided in Section 2.5, and where relevant, Section 4 and supporting appendices.



0 1000 2000
 Metres
 GRID DATUM MGA 94 ZONE 56
 Source: SCPL (2011); DFS-LPI (2012) and DPI-C&I(CLD) (2012)
STRATFORD EXTENSION PROJECT
FIGURE 1-3a
 Relevant Land Ownership Plan
 (Refer Figure 1-3c for Details)



STRATFORD EXTENSION PROJECT
FIGURE 1-3b
 Relevant Land Ownership Plans -
 Stratford and Craven
 (Refer Figure 1-3c for Details)

1	Wendy Jane Fraser	262	Noel Albert Davis & Elizabeth Therese O'Sullivan	355	Sue-Ellen Margaret Kingston/ Anthony Gerard Kingston
2	Farley (Gloucester) Pty. Limited	263	Patrick Michael Ryan	356	Thelma Elaine Mott
4	Gloucester Resources Limited	265	Hans Joran Stenstrom & Janete Stenhouse Stenstrom	357	Victor Steven Pham/ Katherine Dawn Pham
5	Norman Edward Bignell	270	Jason David Collins & Michelle Isabel Barrett	359	William Kilpatrick Hunter/ Kay Edith Hunter
6	AGL Gloucester Le Pty Ltd in 70/100 Share & AGL Gloucester MG Pty Ltd in 30/100 Share as Tenants in Common	273	Baker Place Investments Pty Limited & Dr PW Brady Pty Limited as Tenants in Common in Equal Shares	360	Ter Geoffrey Mason/ Sandra Joy Mason/ Valda Doreen
7	Mary Blanche Burrell	274	Warren Neil Wilson & Colleen Therese Wilson	361	Helen Teresa Whelan
9	Norman John Williams	275	Pace Farm Pty Limited	363	Linda Trudgeon
10	Kenneth James Whatmore & Anne Grace Whatmore	276	Alan Luscombe & Carol Luscombe	364	Heatscape Pty Limited
11	Brian Keith Walker, Lesley Jane Walker, Tyson Brian Walker & Lacey Maree Walker	277	John William Farley	Cr.1	William Deane Wood
12	AGL Upstream Investments Pty Limited	278	Mark Anthony Campbell & Roseleen Linette Campbell	Cr.2	Rodger Malcolm Boorer
13	AGL Energy Limited	279	John Donald Cullum & Rachel Anne Cullum	Cr.7	David Robert Pryce-Jones
14	Allen James Wenham & Pamela Diane Wenham	280	Clifford John Bramley & Terri Louise Bramley	S1	Gary Owen Rees
15	GS & GL Falla Superannuation Pty Limited	281	Colin William Lewis & Lesley Ann Lewis	S3	Irene Myrtle Yeatman
16	Judith Helen Pickett	282	Peter Stephen Ross	S4	Belinda Maree Grady & Terry Raymond Grady
17	Darren James Fisher & Claire Louise Smith	283	Janet Nolan	S5	Christopher James Britnell
19	Yancoal Australia Limited	284	Alec Gregory Perrin & Noreen Nita Jean Perrin	S6	Gary Wayne Threadgate & Julie Frances Threadgate
23	Ross Lewis Bagnall	285	Marshall Leon Carter & Theresa Kathleen Carter	S7	Raymond James Cawley & Lucinda Cawley
24	Geoffrey Lawrence Harris	286	Gerard Roland Burley	S8	Neville Charles Forbes
25	Marisa Thompson	287	Dorothy Kay Sinderberry & Carole Martha Rinkin	S9	Peter John Greenham & Beverley May Greenham
26	Kevin John Lowrey & Robyn Lowrey	288	Alec Gregory Perrin	S10	Louise Frances Gemon
27	The Council of the Shire of Gloucester	289	Eliza Ann Ruth Mcintosh	S11	Adam John Glew
28	Crown Land	290	Anne Frances Ryan & Darcy Tordoff	S12	Grant James Mitchell & Cecily Maree Mitchell
29	Edwin Dennis Ward & Rhonda Fay Ward	291	Trevor Allan Crawley & Coleen Dawn Crawley	S13	Ian Mark Wells & Jody Ann Wells
30	The State of New South Wales	292	James Reginald Fisher & Rhonda Patricia Fisher	S14	Kathleen Edith Bignell
31	Allan Stanley Isaac	293	Kerry Elizabeth Braunton	S15	Minister for Education
32	Eliza Ann Ruth Mcintosh & Ronald Keith Mcintosh	294	Gregory Vincent Morcom & Karen Morcom	S18	Keith Matthew John Whittall & Janelle Fiona Whittall
34	Graham Wesley Hall & Kim Lorraine Hall	295	William John Bush & Danielle Elizabeth Bush	S19	Rodney Lawrence Carroll
35	Leo John Dillon & Isabel Robyn Dillon	296	Peter Geoffrey Watson & Heather Irene Watson	S20	Sandra Ellen McGrath
36	Graham Lindsay Wallace & Marion Frances Wallace	297	William Marten Bosma	S21	Marie Anne Adams
36a	Anthony Stanford Berecy	298	Eric Allan Yates	S22	Telstra Corporation Limited
37	Timothy James Worth	299	Malcolm Ronald Lee	S23	Marie Fay Bartlett
38	Paul Michael Johnson & Judith Anne Johnson	300	Bevan Douglas Hokin & Di Hokin	S24	David Carl John Mavay
39	Paula Anne Standen	301	Folio Identifier Pty Limited	S25	The Trustees of Church Property for the Diocese of Newcastle
39a	Woods Road Pty Ltd	302	Edwin John Walton & Wendy Walton	S26	Margaret Elaine Young
40	Leslie Allenby Blanch	303	JSTC Newcastle Pty Limited	S27	Terry Leonard Brown & Elizabeth Florence Brown
40a	Howard Kerr Williams & Margaret Russell Williams	304	Ernie Danzil Abeysekera & Sharee Ann Abeysekera	S28	David Charles Morris & Yvette Marie Morris
42	Douglas John Blanch	306	Gregory Hunt & Catherine Hunt	S29	Robert Charles Bagnall & Lyndell Joy Bagnall
42a	William Rainsford Ribbons	307	Graham John Wolfenden & Rosalind Mary Wolfenden	S30	Kam Daryl Baker
43	Vicki Colleen Moseley	311	Paul Berthold & Carolyn Berthold	S31	Tracey Louise Richards
43a	Lymarn Holdings Pty Limited	312	Allen James Harrison & Darlene Marie Harrison	S32	Peter Kelly
44	Peter Michael Cross & Kylie Jane	316	Country Rail Infrastructure Authority	S33	Greta Alexandra Langtry, Jennifer Gilbert & Neville Bertram Gilbert
47	David Charles Digges, Carolyn Denise Digges, Timothy Charles Hart & Elizabeth Mary Hart	317	Adrian Kenneth Boorer/ Beverley Ruth Boorer	S34	Edward George Ashby
48	Marion Iris Rounsley	318	Albert Malcolm Timothy Sopher/ Gloria June Sopher	S35	Mark Rodgers & Korinna Yvette Bekker
50	Neil James Porter	319	Allan John Maslen	S36	Kenneth George Platt & Ruth Lynne Platt
51	Gloucester Printing Services Pty Ltd	320	Andrew Charles Vintner/ Kevin Thomas Vintner	S37	Malcolm Neville Pryor & Helen Leone Pryor
53	William Charles Barnes & Cheryl Freda Barnes	323	Burmah Pastoral Co Pty Limited	S38	Stephen Russell Kirkman
54	Kenneth John Hughes & Carrysong Pty Limited	325	Charles Robert Norman	S39	Lizabeth Joye Nicholls & Raymond John Husband
55	Allan James Hancock & Lynda Margret Hancock	326	Charnich Pty Limited	S40	Peter John Curtis
56	Gerald McCalden & Patricia Brawdley McCalden	327	Dallas Reginald Andrews	S41	Desmond Brice McClure & Coral Ann Aplin
57	Pamela Brawdley Harrison	328	Daphne May Chapman	S42	Stephen Ronald Murray & Wilma Joy Murray
58	Douglas William Blanch & Evelyn Fay Blanch	331	Delese Ellen May Buckton	S43	Deanne Donna Squire
59	Guy William Cassar & Cecile Elizabeth Cassar	332	Erol William Hastings/ Lorraine Hastings	S44	Ann Elizabeth Flack
60	Graeme Healy & Philip Weston Greenwood	333	Gary Bruce Grant	S45	Daniel John Keywood, Dale Martin Keywood, Kelly Hazel Keywood & Amanda Margaret Hawkins
62	Dorothy May Beeston	334	Gary Douglas Randall/ Gai Lorraine Randall	S46	Stephen Thomas Parker & Jean Maree Parker
63	National Parks and Wildlife Service	335	Graeme Harold Harris	S47	John Victor Potts
65	Noeline Elizabeth Weismantle	336	Gregory James Channon/ Tonia Alice Edwards	S48	James Bryson Farley & Glenda Laurel Farley
67	Ian Robert Bowen	337	Gregory Thomas Price/ Dianne Elizabeth Price	S49	Lindy Jayne Blanch
68	Julie Dawn Lyford	338	Jason Bruce Steward/ Maria Eliana Steward	S50	Sheryl Fay Vanderdrift & Lindy Jane Blanch
69	Ralph Hooper & Bronwyn Ann Bartholmew	339	John Andersen	S51	Gregory John Trenholme
70	Robert George Knight	340	John Robert Higgins	S52	Ronald John Farley & Theresa Jane Barry
71	Anthony Douglas Burnet & Robyn Annette Burnet	343	Kerrie Banks	S53	Trevor Arthur
73	Rodney John Pearce & Anne Jeannette Pearce	344	Kerry Anne Hartigan/ Antonino Virzi	S54	Scott Anthony Adams
75	Geoffrey Ashton Wilson	345	Liam Woolfrey	S55	Beryl Veronica Mostyn & Tony James Mostyn
87	Pacific Property Investments Ltd	346	Lorraine Bruce	S56	Graham John Collins & Elizabeth Collins
202	Paul Phillip Wenham	350	Raymond Keith Saunders/ Barbara Jayne Saunders	S57	Mavis Jean Gam
203	Samuel Taylor	351	Roger Speaight/ Elisabeth Aili Maria Speaight	S58	Marilyn Dorothy Harrigan
261	Frank Murray Hooke & Susan Elizabeth Hooke	352	Ross Sidney Edwards	S59	Terry Raymond Grady & Belinda Maree Grady
		353	Ryan Garth Harris	S60	Deanne Donna Squires
		354	Scott Ernest Hay/ Leanne Margaret Barrett		

Source: SCPL (2012); DFS-LPI (2012) and DPI-C&L [CLD] (2012)

STRATFORD EXTENSION PROJECT

FIGURE 1-3c
Relevant Land Ownership List



1.1.6 Proponent

The Project is being developed by SCPL (ABN: 26 064 016 164), a wholly owned subsidiary of Yancoal.

The registered and principal office for Yancoal is:

Yancoal Australia Limited
Level 11, 68 York Street
SYDNEY NSW 2000

1.2 DIRECTOR-GENERAL'S REQUIREMENTS

The DGRs for the Project were issued by the DP&I on 14 December 2011 (Attachment 1).

A summary of the DGRs is provided in Tables 1-2 and 1-3. Tables 1-2 and 1-3 also provide the relevant section of the EIS where the DGRs are addressed.

In addition, a summary and index indicating where controlling provisions under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) have been addressed in the EIS are provided in Appendix H.

1.3 PROJECT CONSULTANTS

This EIS was prepared by Resource Strategies Pty Ltd with specialist input provided by the following organisations:

- Minarco-Mineconsult (*mine scheduling*);
- SCPL (*project design, alternatives and justification, preliminary hazard analysis, background data, resource economics, consultation, rehabilitation, final landform and environmental monitoring and management*);
- Allan Watson Associates Pty Ltd (*review of CHPP rejects characteristics*);
- Heritage Computing Pty Ltd (*groundwater modelling and assessment*);
- RPS Aquaterra (*groundwater investigation program*);
- Fluvial Systems Pty Ltd (*geomorphologic review*);
- Groundwater Imaging Pty Ltd (*transient electromagnetic [TEM] survey*);
- Gilbert & Associates Pty Ltd (*surface water assessment, including site water balance*);
- SLR Consulting (*noise and blasting assessment*);

- PAE Holmes (*air quality assessment and greenhouse gas assessment*);
- FloraSearch (*flora assessment*);
- Australian Museum Business Services (*terrestrial fauna assessment*);
- frc environmental (*aquatic ecology assessment*);
- Professor David Goldney (*terrestrial fauna and aquatic ecology*);
- Kayandel Archaeological Services (*Aboriginal cultural heritage assessment*);
- Heritage Management Consultants Pty Ltd (*non-Aboriginal heritage assessment*);
- McKenzie Soil Management Pty Ltd (*agricultural resource assessment and agricultural assessment*);
- Environmental Geochemistry International Pty Ltd (EGi) (*geochemistry assessment*);
- Ardill Payne and Partners (*land contamination assessment*);
- Halcrow Pacific Pty Ltd (*road transport assessment*);
- Marc & Co (*visual simulations*);
- Gillespie Economics (*socio-economic assessment and agricultural assessment*);
- Safe Productions Solutions Pty Ltd (*environmental risk assessment*); and
- Minter Ellison (*legal review*).

In addition to the above, peer review was undertaken by the following specialists (Attachment 3):

- Dr Frans Kalf (*groundwater*).
- Emeritus Professor Thomas McMahon (*site water balance*).
- Mr Richard Heggie (*noise and blasting*).
- Mr Nigel Holmes (*air quality*).

**Table 1-2
Director-General's Requirements – Reference Summary***

Summary of EIS Requirements	EIS Reference
General Requirements	
The EIS must include:	
• Form requirements in clause 6 of Schedule 2 of the EP&A Regulation.	Front of EIS and Attachment 2
• Content requirements in clause 7 of Schedule 2 of the EP&A Regulation.	Refer to Table 1-3
• Description of the Project, including staging of the Project.	Section 2
• Project justification.	Section 6.9 and Appendix P
• Interaction of the Project with existing, approved and proposed mining operations.	Sections 2.5 and 4
• Plans of proposed building works.	Section 2
• Consideration of relevant environmental planning instruments.	Section 6 and Attachment 6
• Risk assessment of the potential environmental impacts of the Project.	Section 4 and Appendix R
• Description of the existing environment.	Section 4
• Assessment of the potential environmental impacts of all stages of the Project, including cumulative impacts.	Section 4
• Description of the measures to avoid, minimise and/or offset the potential impacts of the Project including contingency plans.	Sections 4, 5, 6 and 7
• Consolidated summary of all proposed environmental management and monitoring measures.	Section 7
Key Issues	
• Land Resources.	Section 4.3 and Appendix K
• Water Resources.	Sections 4.4 and 4.5 and Appendices A and B
• Biodiversity.	Sections 4.9, 4.10 and 4.11 and Appendices E, F, G and H
• Heritage.	Sections 4.12 and 4.13 and Appendices I and J
• Air Quality.	Section 4.7 and Appendix D
• Greenhouse Gases.	Section 4.8 and Appendix D
• Noise, Vibration and Blasting.	Section 4.6 and Appendix C
• Traffic and Transport.	Section 4.14 and Appendix N
• Visual.	Section 4.15 and Appendix O
• Waste.	Section 2.15 and Appendix L
• Hazards.	Section 4.18 and Appendix Q
• Social and Economic.	Sections 4.16, 4.17 and 6.9 and Appendix P
• Rehabilitation.	Section 5
Plans and Documents	
• Relevant plans, architectural drawings and diagrams.	Sections 1, 2 and 4
Consultation Requirements	
• Describe consultation with relevant local, State or Commonwealth government authorities, service providers, community groups or affected landowners.	Section 3.1 and Attachment 4
• The consultation process and the issues raised must be described in the EIS.	Sections 3.1 and 3.2
References	
• Relevant guidelines, policies and plans.	Section 8

* The complete version of the DGRs is presented in Attachment 1.

**Table 1-3
Content Requirements of an EIS – Clause 7 of Schedule 2 of the EP&A Regulation**

Summary of Clause 7 of Schedule 2 of the EP&A Regulation	EIS Reference
The EIS must include:	
• Summary of the EIS.	Executive Summary
• Objectives of the Project.	Sections 1.1 and 6.9
• Analysis of any feasible alternatives to the Project, including the consequences of not carrying out the Project.	Section 6.9.1
• Description of the Project.	Section 2
• Description of the environment likely to be affected by the Project.	Section 4
• The likely impact on the environment of the Project.	Section 4
• Description of the measures proposed to mitigate any adverse effects of the Project on the environment.	Section 4
• A list of any approvals that must be obtained under any other Act or law before the Project may lawfully be carried out.	Section 6
• Compilation (in a single section of the EIS) of the measures proposed to mitigate any adverse effects of the Project on the environment.	Section 7
• Justification of the Project, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development (ESD).	Section 6.9

1.4 DOCUMENT STRUCTURE

The EIS comprises a main text component and supporting studies, which include Appendices A through R. An overview of the main text is presented below:

- Section 1 Provides an introduction to the Project and the EIS.
- Section 2 Describes the various components and stages of the Project.
- Section 3 Describes the consultation undertaken in relation to the EIS and ongoing community involvement.
- Section 4 Details the environmental assessment for the Project including a description of the existing environment, an assessment of potential impacts and a description of measures that would be implemented to avoid, minimise, mitigate, offset, manage and/or monitor the potential impacts of the Project.
- Section 5 Describes the rehabilitation strategy for the Project.
- Section 6 Outlines the statutory provisions relevant to the Project, describes the alternatives considered and provides a Project justification.

Section 7 Provides a summary of the proposed environmental management, mitigation, monitoring and reporting in relation to the Project.

Section 8 Lists documents referenced in Sections 1 to 7 of this EIS.

Section 9 Defines abbreviations, acronyms and terms used in Sections 1 to 7 of this EIS.

Attachments to the main text are also provided as follows:

- Attachment 1 Director-General's Requirements.
- Attachment 2 Development Application Area and Real Property Descriptions.
- Attachment 3 Peer Review Letters.
- Attachment 4 Community Information.
- Attachment 5 Water Licensing Addendum.
- Attachment 6 Planning Instruments Addendum.

Appendices A to R contain supporting documentation, including a number of specialist reports:

Appendix A	Groundwater Assessment.
Appendix B	Surface Water Assessment.
Appendix C	Noise and Blasting Assessment.
Appendix D	Air Quality and Greenhouse Gas Assessment.
Appendix E	Flora Assessment.
Appendix F	Terrestrial Fauna Assessment.
Appendix G	Aquatic Ecology Assessment.
Appendix H	EPBC Act Controlling Provisions.
Appendix I	Aboriginal Cultural Heritage Assessment.
Appendix J	Non-Aboriginal Heritage Assessment.
Appendix K	Agricultural Assessment.
Appendix L	Geochemistry Assessment.
Appendix M	Land Contamination Assessment.
Appendix N	Road Transport Assessment.
Appendix O	Visual Assessment.
Appendix P	Socio-Economic Assessment.
Appendix Q	Preliminary Hazard Analysis.
Appendix R	Environmental Risk Assessment.