



Duralie Open Pit Modification Environmental Assessment

SECTION 1

INTRODUCTION



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1 INTRODUCTION

This document is an Environmental Assessment (EA) for the Duralie Open Pit Modification (the Modification) and has been prepared to support an application to modify Project Approval (08_0203) for the Duralie Coal Mine (DCM).

The DCM is located approximately 10 kilometres (km) north of the village of Stroud and approximately 20 km south of Stratford in the Gloucester Valley in New South Wales (NSW) (Figure 1-1).

Duralie Coal Pty Ltd (DCPL) is the owner and operator of the DCM. DCPL is a wholly owned subsidiary of Yancoal Australia.

1.1 BACKGROUND

Approval History

Mining operations at the DCM commenced in 2003 following original granting of Development Consent for the mine by the NSW Minister for Urban Affairs and Planning in 1997.

In 2008 DCPL lodged an application for the Duralie Extension Project (DEP). The DEP was originally approved (Project Approval 08_0203) by the NSW Minister for Planning in November 2010 under Part 3A of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act).

The Ironstone Community Action Group (ICAG) opposed the DEP and in February 2011 brought a merits appeal under section 75L of the EP&A Act in the NSW Land and Environment Court (LEC) against the determination of the Minister for Planning to grant the Project Approval.

The DEP was subsequently approved by the LEC under section 75J of the EP&A Act subject to the revised conditions of Project Approval (08_0203).

A modification to Project Approval (08_0203) was approved in 2012 for an extension to the hours of operation of the Duralie shuttle train (the Duralie Rail Modification).

Approved Duralie Extension Project

The approved DEP includes mining of the Weismantel and Clareval Seams within the Weismantel and Clareval open pits in Mining Lease (ML) 1646 and ML 1427. The approved extent of surface development is shown on Figure 1-2.

Key activities associated with the approved DEP include:

- development of open pit mining operations in ML 1427 and ML 1646 to facilitate a run-of-mine (ROM) coal production rate of up to approximately 3 million tonnes per annum (Mtpa);
- progressive backfilling of the open pits with waste rock as mining develops, and out-of-pit waste emplacement, to an elevation of approximately 110 metres Australian Height Datum (m AHD);
- ongoing exploration activities within existing exploration tenements;
- sized ROM coal rail transport movements on the North Coast Railway between the DCM and Stratford Coal Mine (SCM);
- disposal of excess water through irrigation within ML 1427 and ML 1646;
- development of dewatering bores, pumps, dams, irrigation infrastructure and other water management equipment and structures;
- supporting infrastructure and facilities;
- establishment of a permanent Coal Shaft Creek Diversion alignment adjacent to the existing DCM mining area; and
- ongoing monitoring and rehabilitation.

1.2 THE MODIFICATION

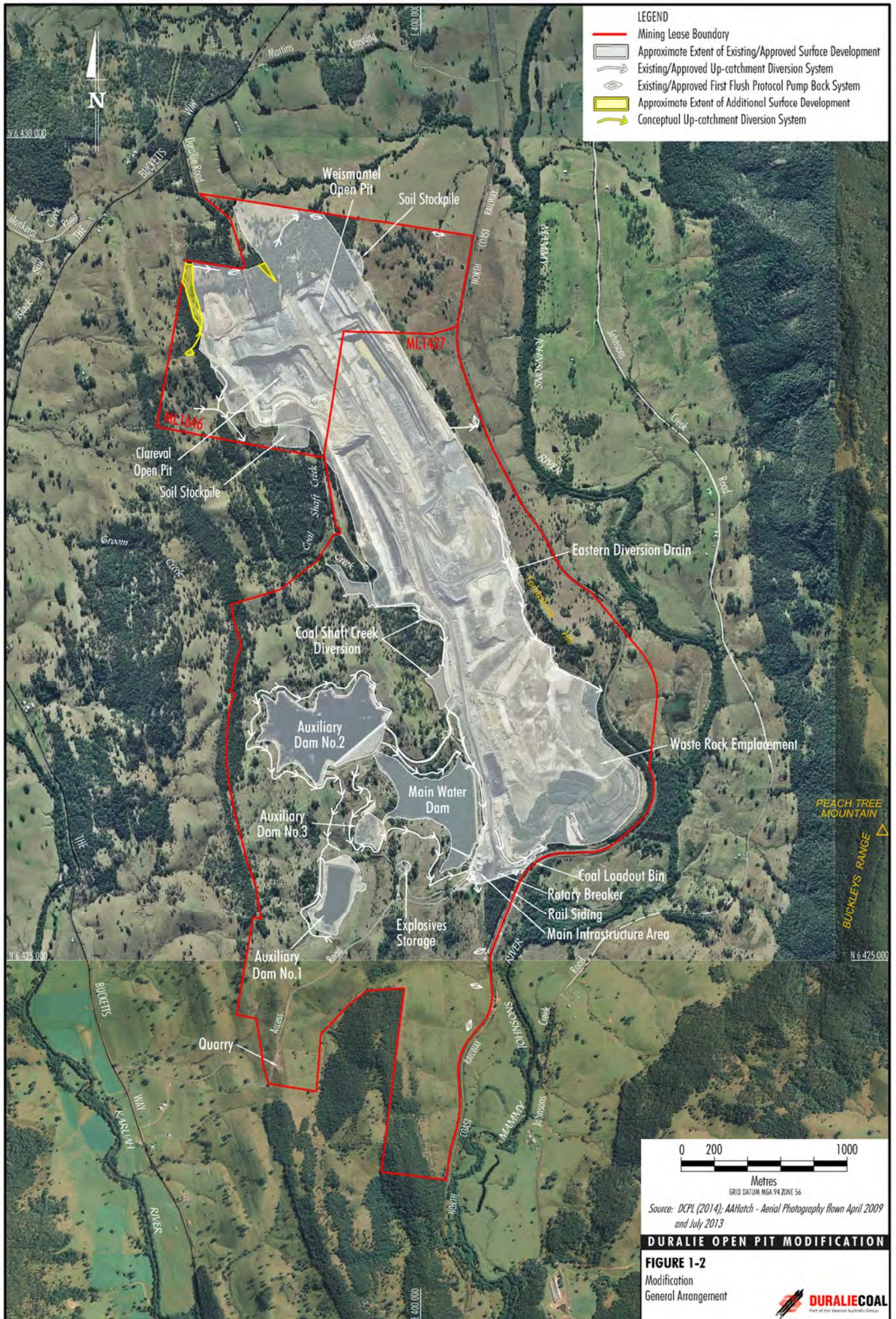
Modification Overview

The DEP EA envisaged ongoing mine exploration activities being undertaken ahead of the open pit mining operations to investigate geological structures and seam morphology as input to detailed mine planning.

To reflect the results of this ongoing mine exploration and mine planning, the following changes to the currently approved DCM are proposed for the Modification:

- Increase in the maximum depth of the Clareval open pit.
- A minor increase in the extent of surface development of the DCM of approximately 2.5 hectares (ha) (Figure 1-2), resulting from:
 - a reduction in low wall angles of the Clareval open pit and the removal of a pillar between the Clareval and Weismantel open pits to improve geotechnical stability; and
 - associated relocation of the up-catchment diversion to the west of the Clareval open pit.





LEGEND

- Mining Lease Boundary
- Approximate Extent of Existing/Approved Surface Development
- Existing/Approved Up-catchment Diversion System
- Existing/Approved First Flush Protocol Pump Back System
- Approximate Extent of Additional Surface Development
- Conceptual Up-catchment Diversion System



Source: DCPL (2014); AAHatch - Aerial Photography flown April 2009 and July 2013

DURALIE OPEN PIT MODIFICATION

FIGURE 1-2
Modification
General Arrangement



- Revised mining sequence (i.e. progression of mining in the Clareval and Weismantel open pits).
- Increased height of the waste rock emplacement (i.e. the backfilled open pit) from the currently approved elevation of approximately 110 m AHD to approximately 135 m AHD.

The Modification would result in **no change** to the following key elements of the currently approved DCM:

- Maximum annual ROM coal production.
- Maximum annual waste rock extraction.
- Mine life.
- Mining tenements (i.e. MLs 1427 and 1646).
- Mining method (i.e. conventional open pit mining methods and equipment).

- Coal seams mined (i.e. Clareval and Weismantel).
- Duralie shuttle train rail movements or hours.
- Waste rock geochemistry management measures.
- Extent and use of irrigation areas for the disposal of excess water, including during first flush protocol.
- Rehabilitation of surface disturbance areas.
- Operational workforce.
- Deliveries.
- Power supply.

A summary comparison of the Modification and the currently approved DCM is provided in Table 1.

**Table 1
Summary Comparison of the Approved DCM and the Modification**

Project Component	Summary of the Approved DCM ¹	Summary of the Modification
Open Pit Mining and ROM Coal Production	<ul style="list-style-type: none"> • Conventional open pit mining methods and equipment. • ROM coal production of approximately an additional 20.5 million tonnes (Mt). 	<ul style="list-style-type: none"> • No change.
Life of Mine	<ul style="list-style-type: none"> • Operational life to approximately 2019. 	<ul style="list-style-type: none"> • No change.
Coal Seams and Open Pits	<ul style="list-style-type: none"> • Mining of the Weismantel Seam and Clareval Seam within the Weismantel and Clareval open pits respectively. 	<ul style="list-style-type: none"> • No change to coal seams mined within the Weismantel and Clareval open pits. • Minor changes to the surface extent of the currently approved open pits to improve geotechnical stability, including a reduction in low wall angles of the Clareval open pit and the removal of the pillar between the Clareval and Weismantel open pits. • Changes to the open pit shells, including an increased maximum pit depth, to reflect the results of recent geological exploration.
Annual ROM Coal Production	<ul style="list-style-type: none"> • Production of up to approximately 3 Mtpa. 	<ul style="list-style-type: none"> • No change.
Annual Waste Rock Production	<ul style="list-style-type: none"> • Production of up to approximately 14.4 million bank cubic metres (Mbcm) per annum. 	<ul style="list-style-type: none"> • No change.
Waste Rock Management	<ul style="list-style-type: none"> • Partial backfill of the Weismantel and Clareval open pits and placement of waste rock in out-of-pit waste rock emplacements. • Maximum waste rock emplacement elevations of approximately 110 m AHD. 	<ul style="list-style-type: none"> • No change to waste rock management or the locations of waste rock emplacement. • Waste emplacement elevation up to approximately 135 m AHD due to revised waste emplacement design and a revision to the waste swell factor for the DEP based on surveyed results.
Mining Progression	<ul style="list-style-type: none"> • Completion of mining in the Weismantel open pit followed by mining in the Clareval open pit. 	<ul style="list-style-type: none"> • Revised progression of mining (i.e. mining in the Clareval followed by mining in the Weismantel open pits).
ROM Coal Train Movement Hours	<ul style="list-style-type: none"> • 6.00 am to 12.00 am (and 12.00 to 1.00 am under exceptional circumstances). 	<ul style="list-style-type: none"> • No change.

Table 1 (Continued)
Summary Comparison of the Approved DCM and the Modification

Project Component	Summary of the Approved DCM¹	Summary of the Modification
Water Management	<ul style="list-style-type: none"> Progressive upgrades and augmentation to existing water management system (e.g. raising of Auxiliary Dam No. 2). Use of the open pit void as in-pit water storage. Development of new irrigation areas within ML 1427 and ML 1646. Water management system designed for no release of mine water to Mammy Johnsons River. 	<ul style="list-style-type: none"> Relocation of water management infrastructure (i.e. up-catchment diversion) adjacent to the Clareval open pit. No change in the use of the open pits for water storage, however, there would be changes to the timing of the availability of the open pits for water storage due to the revised mining progression. No change to areas of irrigation. No change to design of water management system to not release water to Mammy Johnsons River.
Coal Handling	<ul style="list-style-type: none"> Coal handling area (including rotary breaker). 	<ul style="list-style-type: none"> No change.
Surface Development Extent	<ul style="list-style-type: none"> As shown on Figure 1-2. 	<ul style="list-style-type: none"> Minor increase in surface development extent of approximately 2.5 ha, comprising approximately 1.8 ha of derived grassland and 0.7 ha of open forest.
Final Voids	<ul style="list-style-type: none"> At the cessation of mining, final voids would remain in the northern extents of the Clareval and Weismantel open pits. 	<ul style="list-style-type: none"> No change to final voids in the Clareval and Weismantel open pits. Minor changes to the depth and surface extent of the final voids.
Rehabilitation	<ul style="list-style-type: none"> Continued rehabilitation of waste rock emplacement areas and other progressive surface disturbance areas. 	<ul style="list-style-type: none"> No change to progressive rehabilitation. Final rehabilitated landform would include waste rock emplacement with elevation of up to approximately 135 m AHD.
Exploration	<ul style="list-style-type: none"> Exploration activities undertaken in accordance with the requirements of existing exploration tenements. 	<ul style="list-style-type: none"> No change.
Employment	<ul style="list-style-type: none"> An average of approximately 135 employees. 	<ul style="list-style-type: none"> No change.

¹ As per Project Approval (08_0203), the DEP EA (January 2010) and Duralie Rail Hours Modification EA (April 2012).

Modification Requirement and Justification

The Modification is required to enable the efficient extraction of coal, continuation of waste emplacement at the DCM and to improve the geotechnical stability of the open pit low walls.

Without the Modification, waste emplacement at the DCM would be constrained and a portion of the coal reserves approved to be extracted from the Weismantel and Clareval open pits until 2019 would be foregone, resulting in a truncation of the mine life.

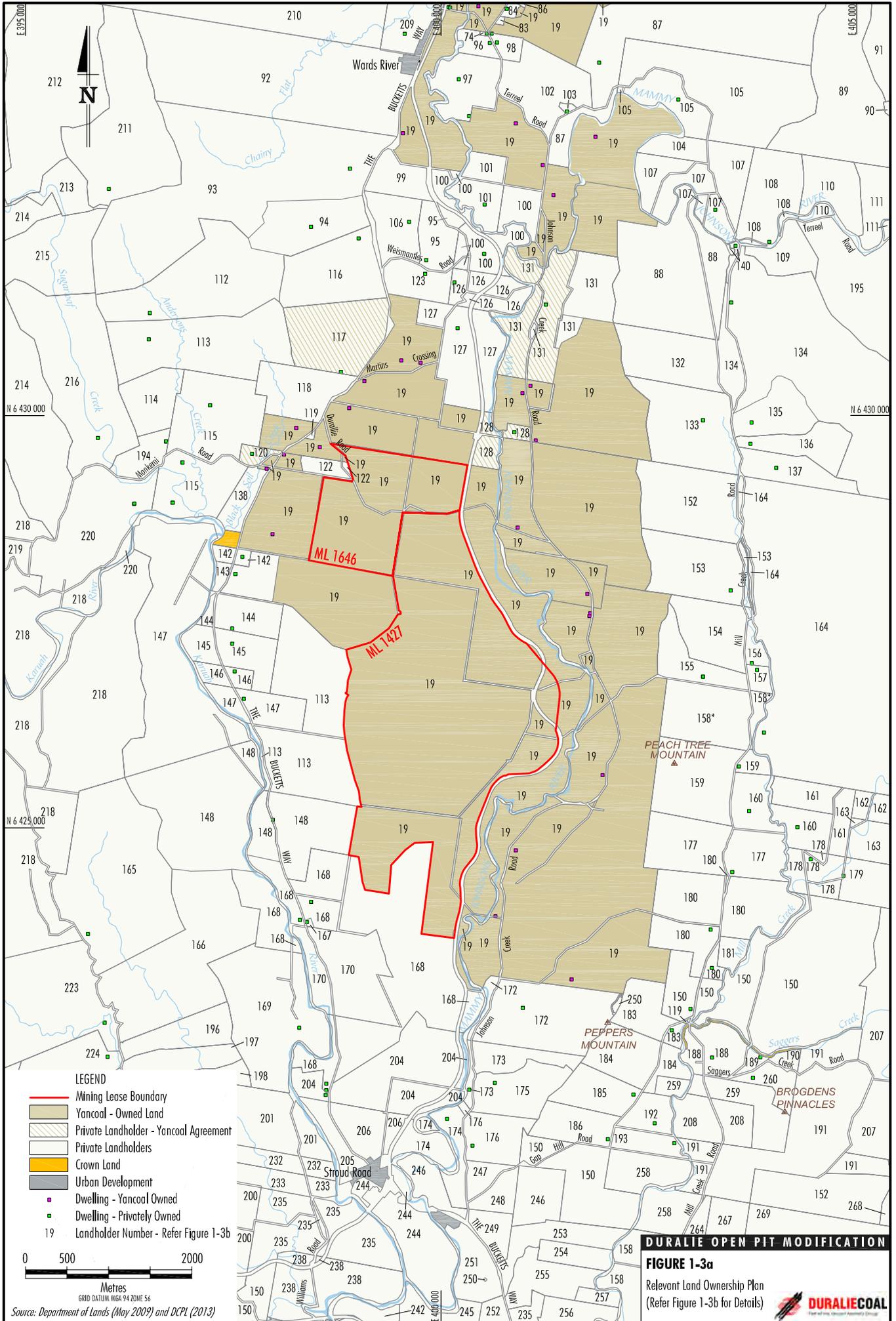
1.3 SITE LOCATION AND TENURE

The DCM is located within ML 1427 and ML 1646, and also within exploration authorisation 315.

The Project Application Area and the real property descriptions are provided in Appendix 1 of Project Approval (08_0203), which is provided as Attachment 1 to this EA.

Relevant land ownership information within the immediate vicinity of the DCM is provided on Figures 1-3a and 1-3b.

The DCM is located within the Great Lakes Local Government Area (LGA).



- LEGEND**
- Mining Lease Boundary
 - Yancoal - Owned Land
 - Private Landholder - Yancoal Agreement
 - Private Landholders
 - Crown Land
 - Urban Development
 - Dwelling - Yancoal Owned
 - Dwelling - Privately Owned
 - 19 Landholder Number - Refer Figure 1-3b

DURALIE OPEN PIT MODIFICATION

FIGURE 1-3a
 Relevant Land Ownership Plan
 (Refer Figure 1-3b for Details)



Source: Department of Lands (May 2009) and DCPL (2013)

<u>Reference</u>	<u>Land Owner</u>	<u>Reference</u>	<u>Land Owner</u>	<u>Reference</u>	<u>Land Owner</u>
19	Yancoal Australia Limited	138	P. W. M. Moylan, B. D. Moylan,	194	J. & C. L. Kellehear
74	D. L. & D. W. Melmeth		G. O. Moylan, S. C. M. Newton &	195	Shulgin Investments Pty Ltd
83	Cemetery		M. J. Moylan	196	E. D. Sanders
84	A.W. & C.M. Hart	140	D. C. Bennett & D. M. Stark	197	H. R. & D. A. Moorehouse
86	J. Andersen	142	P. G. Madden	198	Aspenview Enterprises Pty Limited
87	Pacific Property Investments Ltd	144	D. J. Wielgosinski	200	G. J. & S. G. Trappel
88	V. S. Edwards	145	C.W. & J. I. Edwards	201	I. G. Wilson
89	D. J. Robertson	146	M. A. Bragg	204	M. C. Jones
90	W. A. & J. A. Thomson	147	S. Edwards	205	J. S. & K. L. Bratfield
91	Hunter Water Corporation	148	D. J. McAndrew	206	M. A. Watkins
92	Sejon No 4 Pty Ltd	150	R. N. & T. E. Rumbel	207	P. Trenchev
93	K. V. & P. M. Howard	152	D. M. Lowrey	208	C. A. Bowden
94	B. V. & P. O. Howard	153	L. & R. K. Paul	209	D. M. Chapman
95	D. J. Smith & S. Ransley	154	J. R. Morgan	210	Heatscape Pty Limited
96	H. T. & M. B. Turnbull	155	M. & R. Guberina	211	B. & B. I. Irwin
97	S. W. Davis	156	T. R. J. & B. Hope	212	P. & N. V. Makaroff
98	I. D. Partelle & M. M. Ramsay	157	C. N. & S. D. Stephenson	213	E. A. & P. Hillard
99	K. MacFarlane	158	B. Gilbert	214	K. G. Sneddon
100	K. S. Richards	159	T. R. Waterer	215	Monkerai Holdings Pty Limited
101	K. M. & D. B. Holloway	160	P. & M. E. Kenney	216	D. M. Matcham
102	W. R. Kerslake	161	D. G. Hutchison	218	D. K. & J. A. Holdings Pty. Limited
103	G. L. Macedo	162	L. Partridge	219	C. A. Olsen
105	R. M. Edwards	163	M. A. & C. H. Hockings & C. H. Willcox	220	T. G. Lindfield and Associates Pty. Limited
106	R. A. James	164	Gorton Timber Co. Limited	223	F., E., R., D. M. & G. Ferraro
107	P. G. Spencer	165	ESOR Nominees Pty Limited	232	I. G. Wilson
108	A. G. & M. A. Tersteeg	166	A. J. & A. L. Daniel	233	R. G. Wilson
109	R. J. Bathgate & M. L. Levey	167	M. & S. M. Ravnagani	235	M. J. Bratfield
110	G. W. Lewis & A. J. Moore	168	V. R. & E. K. Schultz	238	H. R. Kerr
111	T. J. Somerville & C. D. Martin	169	R. D. K. & N. L. Williams	242	M. M. Gorton
112	S. R. Hogeveen	170	I. K. & M. J. Schultz	244	R. R. & M. J. Lawrence
113	C. W. & J. I. Edwards	172	S. J. & J. E. Lyall	245	N. Curtis
114	H. Paliokas	173	S. M. Trigg, J. M. Trigg, M. J. Holland,	246	P. & S. A. Margery
115	P. W. M. & B. D. & G. O. & M. J. Moylan & S. C. M. Newton		B. J. Holland, M. Trigg & S. C. Trigg	247	N. J. Alexander & T. L. Sauerbier
116	G. R. Weismantel	174	D. C. Carroll	248	R. B. & J. M. Eastoe
117	E. D. Holmes and L. M. Holmes	175	S. G. Thomas	249	P. Margery
118	P. W. M. Moylan	176	J. D. Thompson	250	Midcoast County Council
119	Great Lakes Council	177	W. J. Thompson	251	B. R. Warner
120	M. J. & C. A. Mahony	178	N. E. Hitchcock & E. E. Coldham	252	D. K. Pritchard
122	S. White	179	I. Mellar	253	E. & J. A. Allan
123	J. L. Oleksiuk & K. P. Carmody	180	K. J. Dennis	254	D. N. & D. T. Young
126	H. L. & M. R. Hamann - Pivalu Pty Limited	181	G. J. Thompson	255	G. W. Bevan & C. A. Bevan
127	A. J. Fisher-Webster	183	M. H. & E. V. Elfick	256	M. I. Butler
128	D. R. & B. Hare-Scott	184	B. J. & M. C. Gay	257	H. Butler
131	W. L. Relton	185	A. W. Raine & T. Hilleard	258	G. K. & A. G. Brown
132	A. T. Gorton	186	K. B. & J. N. Farnham	259	C. A. Bowen
133	R. J. Gorton	188	T. E. Rumbel	260	D. & J. Roberts
134	Duzmen Pty Ltd	189	H. J. Gillard	264	K. Pepper & S. M. Lyall
135	P. J. Ayliffe	190	B. Clayton	267	D. L. & T. L. Fordham
136	D. P. Pickles	191	A. M. Mokeeff	268	Hudrow Pty Limited
137	T. J. Lord	192	S. & A. F. Vajda	269	The Minister for Forestry
		193	N. & C. M. Smith		

Source: DCPL (2014) and Department of Lands (2009)

DURALIE OPEN PIT MODIFICATION

FIGURE 1-3b

Relevant Land Ownership List



1.4 STRUCTURE OF THIS EA

This EA is structured as follows:

Section 1	Provides an overview of the approved DCM, the Modification and a summary of the consultation undertaken in relation to the Modification.
Section 2	Provides a description of the approved DCM.
Section 3	Provides a description of the Modification.
Section 4	Provides a review of the existing environment, assesses potential impacts associated with the Modification and describes the existing DCM environmental management systems and measures in place to manage and monitor any potential impacts.
Section 5	Describes the proposed rehabilitation of the Modification.
Section 6	Provides the planning framework and statutory context.
Section 7	References.
Section 8	Lists abbreviations, acronyms and terms referred to in Sections 1 to 7 of this EA.

Attachments 1 and 2 and Appendices A to H provide supporting information as follows:

Attachment 1	Existing Project Approval
Attachment 2	Aquifer Interference Policy and Water Licensing Addendum
Appendix A	Noise and Blasting Assessment
Appendix B	Air Quality Assessment
Appendix C	Groundwater Assessment
Appendix D	Surface Water Assessment
Appendix E	Flora Assessment
Appendix F	Fauna Assessment
Appendix G	Visual Assessment
Appendix H	Aboriginal Cultural Heritage Assessment

1.5 CONSULTATION

Consultation has been conducted with key state government agencies, local councils, the local community and Aboriginal stakeholders during the preparation of this EA. A summary of this consultation to date is provided below. Consultation will continue during the public exhibition of this EA and the assessment of the Modification.

1.5.1 State Government Agencies

NSW Department of Planning and Environment

DCPL met with the NSW Department of Planning and Environment (DP&E) in May 2014 to discuss the scope of environmental assessment for the Modification and the assessment and approvals process.

Regulatory Agencies

DCPL met with the NSW Office of Environment and Heritage (OEH), NSW Environment Protection Authority (EPA) and NSW Office of Water (NOW) in June 2014 to present an overview description of the Modification and proposed scope of environmental assessment.

In addition, DCPL sent briefing letters (dated 25 June 2014) providing an overview description of the Modification and proposed scope of environmental assessment to the following regulatory agencies:

- NSW Division of Resource and Energy (DRE);
- NSW Health;
- NSW Fisheries;
- Transport for NSW;
- NSW Roads and Maritime Services;
- NSW Department of Primary Industries (Agriculture) (DPI); and
- MidCoast Water.

1.5.2 Local Councils

The DCM is located within the Great Lakes LGA.

The Duralie shuttle train travels to the SCM, which is located within the Gloucester LGA.

The Great Lakes Shire council is represented on the Duralie Community Consultation Committee (CCC). DCPL briefed the CCC in regard to the Modification in May 2014 (Section 1.5.3).

In addition, DCPL sent briefing letters (dated 25 June 2014) providing an overview description of the Modification and proposed scope of environmental assessment to the Great Lakes Shire Council and Gloucester Shire Council.

1.5.3 Public Consultation

Community Consultation Committee

The Duralie CCC was established in accordance with Schedule 5, Condition 5 of Project Approval (08_0203). The CCC currently consists of:

- five community representatives;
- two representatives of the Great Lakes Shire Council;
- an independent chairperson; and
- representatives of DCPL.

The CCC provides a mechanism for ongoing communication between DCPL and the community.

The CCC holds quarterly meetings, and consultation regarding the Modification was conducted during the May 2014 meeting.

CCC presentation material and meeting minutes are available on the DCPL website (www.duraliecoal.com.au).

Ironstone Community Action Group

DCPL consulted with the ICAG in June 2014 to provide an overview description of the Modification and proposed scope of environmental assessment.

ICAG were also consulted for the Modification Aboriginal Cultural Heritage Assessment (ACHA) (Appendix H).

Local Community and Affected Landowners

DCPL consulted with the landowners surrounding the DCM in June and July 2014 via a combination of meetings, telephone conversations and letters. The landowners were provided an overview of the Modification, a description of the proposed scope of environmental assessment and details of the expected assessment process (e.g. public exhibition).

Aboriginal Community

A detailed description of the consultation undertaken for the ACHA prepared for the Modification with the registered groups during the preparation of this EA is provided in Appendix H.

1.5.4 Community Initiatives and Involvement

Website and Community Call Line

DCM information is made available on the DCPL website, including:

- contact details, including the community complaints line;
- environmental management, plans and strategy information;
- CCC meeting minutes and newsletters;
- audit reports;
- monitoring and reporting data; and
- development applications.

The DCPL web address is provided below:

www.duraliecoal.com.au

DCPL has also established a dedicated Complaints Line (1300 658 239) that is available 24 hours, 7 days a week for community members who have enquiries or who wish to lodge complaints in relation to DCPL's activities.

Community Support Program

DCPL/Yancoal has established the Community Support Program to provide assistance to local initiatives within the Gloucester Basin.

The aim of the Community Support Program is to help benefit a wider range of community needs such as education, environment, health, infrastructure projects, arts, leisure and research.

- Stroud Rodeo.
- Stroud Rugby League Football Inc.
- Stroud Show Association Inc.

The Community Support Program has an allocation of funding that is separate to DCPL's council contributions and Environment and Welfare Trusts.

Formal applications for the Community Support Program are called for twice a year.

Sponsorships and Community Funding

DCPL/Yancoal support the local community through sponsorship of community organisations and direct payments to local councils. Beneficiaries of funding contributions to community groups include:

- Avon Valley Field Archers.
- Barrington Public School P&C Association.
- Booral Public School.
- The Bucketts Way Neighbourhood Group Inc.
- Dungog National Servicemen's Association.
- Dungog A&H Association Inc.
- Gloucester Show Society.
- Gloucester Little Athletics.
- Gloucester Business Chamber.
- Gloucester Country Club Limited.
- Gloucester Chamber of Commerce.
- Gloucester District Junior Cricket Association.
- Gloucester District Tennis Association Inc.
- Gloucester High School.
- Gloucester Junior Rodeo.
- Gloucester Men's Bowling Club.
- Gloucester Medical Centre Associateship.
- Gloucester Magpies Junior Rugby League Inc.
- Gloucester Public School.
- Gloucester Tourist Office.
- Gloucester Mountain Man Tri Challenge.
- GSC Hillcrest Appeal.
- St Joseph's P&F Association.
- Stratford Public Hall.
- Stratford Public School.
- Stroud Public School P&C Association.
- Stroud Road Community Hall & Progress Association Inc.