

# Section 1

## Introduction

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*This section introduces the project to develop an underground coal mine to access the Narrabri Coal Resource, located approximately 30km southeast of Narrabri and 10km north-northwest of Baan Baa.*

*This section includes:*

- *an outline of the scope and format of the document;*
  - *an introduction to the Proponent;*
  - *relevant background to the project including a review of the history of mining and relevant information on ongoing and approved mining developments in the Gunnedah/Boggabri area;*
  - *a discussion on the proposed approach towards environmental management and documentation; and*
  - *identification of the personnel involved in the project design, document preparation and specialist consultant investigations.*
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## 1.1 SCOPE

This *Environmental Assessment* report has been prepared by R.W. Corkery & Co. Pty. Limited to support an application for project approval (application number 05-0102) by Narrabri Coal Pty Ltd (“the Proponent”) to develop and operate an underground coal mine to be known as the Narrabri Coal Project – Stage 1 (the “project”). A copy of the application for project approval is included as **Appendix 1**.

For the purposes of this document, the area that encompasses the surface infrastructure associated with the project as well as the boundaries of the proposed mining lease application for the proposed underground mine is referred to as the “Project Site”. **Figure 1.1** places the Project Site in its regional setting in northern New South Wales, approximately 400km northwest of Newcastle. **Figure 1.1** also provides the local setting of the Project Site approximately 30km south-southeast of Narrabri and 10km north-northwest of Baan Baa.

The project would involve a number of component activities, all of which are described in this *Environmental Assessment*, namely:

- underground mining and associated activities;
- crushing and screening of coal;
- construction of the site access road from an existing intersection with the Kamilaroi Highway (including a rail level crossing);
- upgrading the existing intersection with the Kamilaroi Highway;
- installation and/or construction of Project Site infrastructure and services, eg. power supply, water management structures, internal access roads;
- transportation of coal from the Project Site to Port Newcastle via train; and
- final rehabilitation of the areas of surface disturbance within the Project Site following completion of the project.

The project is classified as a Major Project in accordance with the State Environmental Planning Policy (Major Projects) (2005) and, consequently, the Minister for Planning is the approval authority and an *Environmental Assessment* report is required to be submitted to support the project approval application. The application is made possible by virtue of the fact that coal mining is a permissible land use within the Project Site, ie. under Clause 9 of the Narrabri LEP 1992 which promotes the proper management and utilisation of mineral resources.

This *Environmental Assessment* focuses on the proposed activities within the first stage of the Narrabri Coal Project, ie. a stage where there is a considerable understanding of the mining method and environmental management requirements. Where appropriate, reference is made to Stage 2 of the project, ie. a possible longwall coal mining operation that could be developed if a range of technical issues are resolved that would support a longwall coal mining operation. Notwithstanding this possibility, this document focuses on Stage 1 of the Narrabri Coal Project from its initial establishment through to its rehabilitation in the event that none of the defined coal resource is able to be recovered by longwall mining methods.



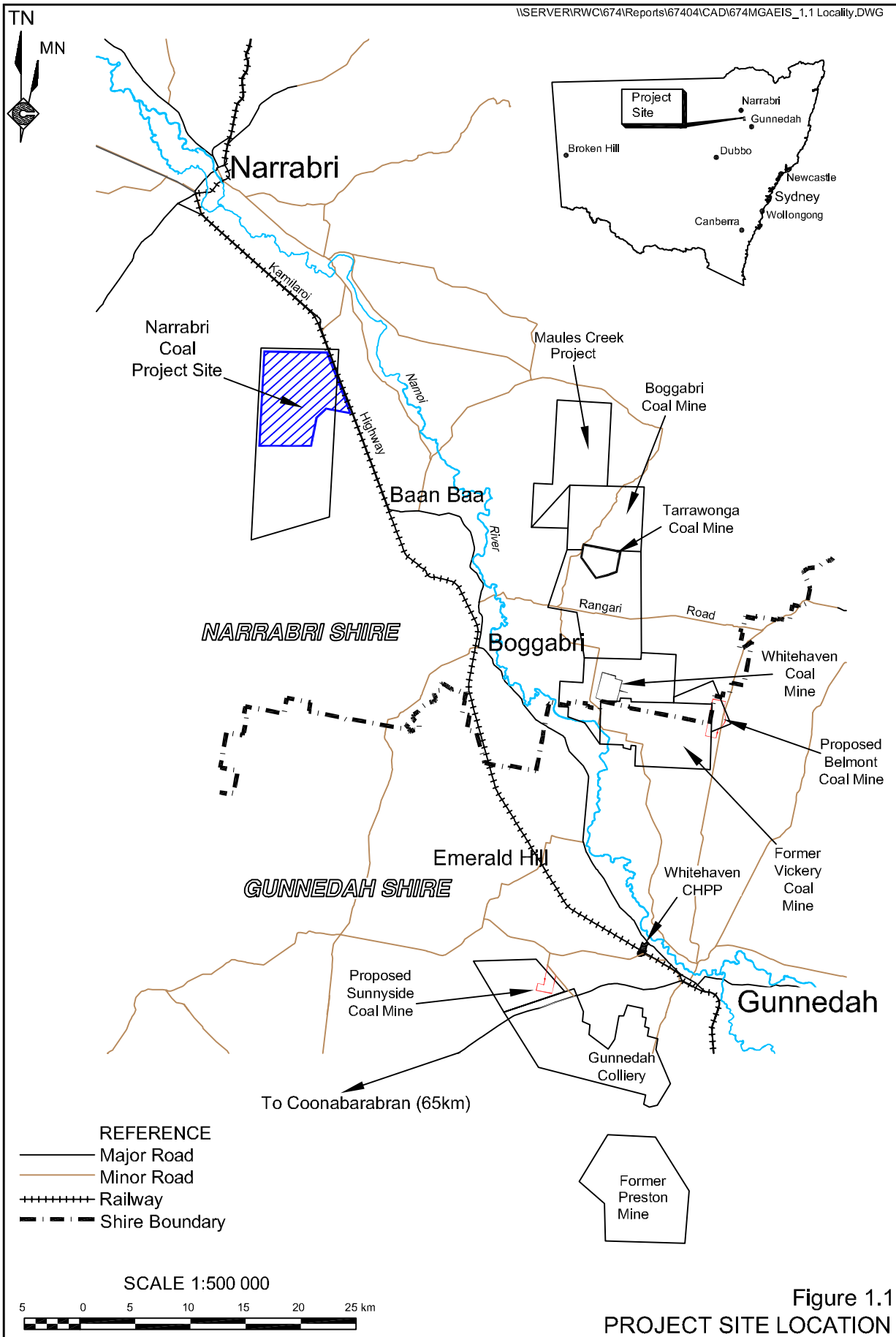


Figure 1.1  
PROJECT SITE LOCATION



## 1.2 FORMAT OF THE REPORT

The *Environmental Assessment* includes six sections of text, a reference section, glossary and a set of appendices. The information presented in this document covers all aspects of the planning, development, operation, rehabilitation and environmental monitoring at the proposed mine at a level of detail dependent on the risk posed by each issue. The issues and their relevant importance to the assessment of the project have been identified through consultation with government authorities, the local communities, stakeholders, surrounding landowners and specialist consultant assessments.

The format of this document reflects the fact that the Narrabri Coal Project would be developed in an area where there is no local mining history. Hence, it is necessary for the Proponent to develop the mine in a staged manner to ensure that all technical issues are resolved to achieve a safe, productive and environmentally responsible mining venture. This document focuses upon the first stage of the Narrabri Coal Project, however, sufficient information is included to outline the planned second stage, if all technical issues can be resolved. In any event, the second stage of the project would be the subject of a separate and comprehensive *Environmental Assessment*.

The format of the *Environmental Assessment* is as follows.

- Section 1:** introduces the project, the Proponent and Project Site and briefly describes the history of coal mining in the Gunnedah Basin. Background information is provided to the project including information on existing, approved and proposed mines and related developments within the Gunnedah-Boggabri-Narrabri area. The section concludes with an outline of the ongoing environmental management and documentation proposed for the project and information on the management of investigations for the *Environmental Assessment*.
- Section 2:** describes the Proponent's objectives and proposed Stage 1 mining, coal processing, transportation, waste management and rehabilitation activities. The section concludes with an overview of the envisaged Stage 2 mining activities.
- Section 3:** provides a description of the process used to identify and prioritise the key issues for assessment with reference to the Director-General's requirements for the project, stakeholder consultation through the project planning stages and a general environmental risk analysis undertaken to establish the specific environmental risk(s) posed by the issues identified.
- Section 4:** presents a description of a range of environmental features of the local environment that may or would be influenced by the project. The design and operational safeguards, and where appropriate, the management procedures that have been incorporated into the project to protect the local environment, are also presented. This section also analyses the potential impact the project would have on the physical, biological and social environment once the safeguards and procedures are adopted. This section has been prepared in three parts as follows.
- Part A: presents background information on topography, climate, land ownership and land use which influence the impact of the project on a range of other environmental parameters.



Part B: focusses on the environmental impacts associated with the Stage 1 Mining operation.

Part C: presents a conceptual outline of the impacts that may be associated with the Stage 2 longwall mining operation, should it proceed.

**Section 5:** provides a draft statement of commitments the Proponent is prepared to implement with respect to environmental management and monitoring for the entire Stage 1 project.

**Section 6:** provides a conclusion to the document which justifies the project in terms of biophysical, economic and social considerations and records the consequences of not proceeding with the project.

**Section 7:** lists the various source documents referred to for information and data used during the preparation of the *Environmental Assessment*.

**Section 8:** presents a glossary of acronyms, symbols and units and technical terms, used throughout the *Environmental Assessment*.

**Appendices:** present the following additional information.

1. A copy of the Proponent's application for project approval.
2. An itemised and tabulated summary of the Director-General's Requirements, including the requirements provided by the various government agencies consulted, and reference to the section within the *Environmental Assessment* or *Specialist Consultant Studies Compendium* where each is addressed.
3. A SEPP 33 hazardous substance and dangerous goods risk screening based on the document entitled *Applying SEPP 33 2nd edition*, (DUAP, 1997).
4. A technical memorandum prepared by Parsons Brinckerhoff Australia Pty Limited, presenting a concept design for a water conditioning system, should it be required.

A two volume *Specialist Consultant Studies Compendium* has been placed on exhibition with the *Environmental Assessment*. The contents of these reports are summarised into the appropriate sections of the *Environmental Assessment*. Individual copies of each report or the entire *Specialist Consultant Studies Compendium* can be provided to any person who purchases a hard copy of the *Environmental Assessment*, while a full copy of the compendium is also included on the CD compiled for the project.

## 1.3 THE PROPONENT, PROJECT SITE AND PROJECT TERMINOLOGY

### 1.3.1 The Proponent

Narrabri Coal Pty Ltd ("the Proponent") is a private company associated with Whitehaven Coal Mining Pty Ltd (WCM) through common shareholders and directors.



The directors of Narrabri Coal Pty Ltd have considerable coal mining experience in the Gunnedah Basin, particularly since 1999 when WCM became actively involved in coal mining (see Section 1.4.1).

### 1.3.2 The Project Site

The Project Site is depicted in **Figure 1.2** and encompasses all proposed surface infrastructure, including the site access road and intersection with the Kamilaroi Highway and the boundaries of the proposed underground mine. **Table 1.1** lists the individual lots within the area covered by the Project Site. The individual lots relevant to the proposed surface infrastructure are highlighted.

**Table 1.1**  
**Project Site Land Titles**

Area of Surface Activities	Land Title Reference
Pit Top Area	Part Lot 60 DP 757124, Part Lots 151 & 152 DP 816020.
Ventilation Shaft Area	Part Lot 152 DP 816020.
Indicative Mining Area	Part Lots 57, 58, 63 to 65, 81 to 84 & 115 DP 757124, Lot 61 DP 757124, Part Lot 1 DP 811171, Lot 2 DP 811171, Part Lots 3, 8, 25, 67 & 68 DP 757104, Lot 7 DP 757104, Part Lot 152 DP 816020, Lot 1 DP 659899, Part Lot 3 DP 1005608, Part Pilliga East State Forest and various Crown roads.
Remainder of Project Site	Lots 381 & 382 DP 1028753, Part Lot 1 DP 798487, Part Lots 57, 58, 60, 63 to 65, 81 to 84, , 115 DP 757124, Part Lot 1 DP 811171, Part Lots 3, 8, 10, 25, 67 & 68 DP 757104, Part Lot 3 DP 1005608, Part Lots 151 & 152 DP 816020, Part Pilliga East State Forest and various Crown roads.

The Project Site boundary is largely coincident with the northern and western boundaries of the northern half of Exploration Licence (EL) 6243, with the eastern boundary truncated west of the North Western Branch Railway and the southern boundary cut back towards the edge of the coal resource.

### 1.3.3 Project Terminology

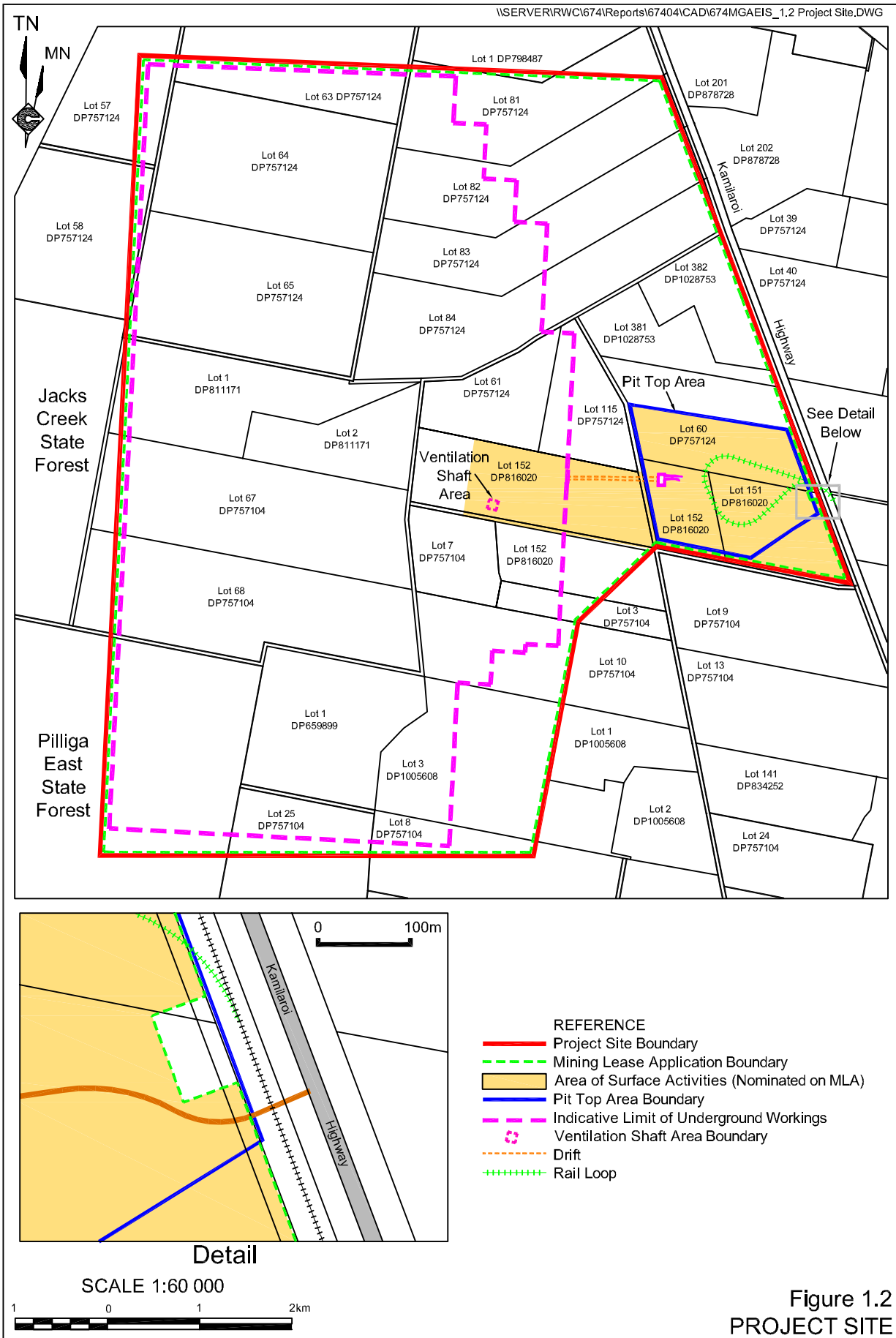
**Figure 1.2** also displays the following project component areas that are regularly referred to throughout this document. Each of these component areas are described as follows.

Project Site/Mining Lease:  
Application Area (5 210ha)      The area relevant to the application for project approval.

Indicative Mining Area:  
(3 630ha)      Area bound by the indicative limit of underground workings.

Area of Surface Activities:  
(465ha)      Area nominated within the Mining Lease Application within which surface facilities and disturbance is proposed.





Pit Top Area: (256ha)	Main area of surface disturbance incorporating mine portals, surface buildings, rail loop, ROM and product coal stockpile areas etc (see <b>Figure 2.5</b> ).
Ventilation Shaft Area: (0.5ha)	Area dedicated for operation of the ventilation fan(s) for the entire mine.
Surface Facilities:	All facilities within the Pit Top Area and Ventilation Shaft Area.

A glossary of all other mining and environment-related terminology, is presented in the back of this document.

## **1.4 PROJECT BACKGROUND**

### **1.4.1 Introduction**

Coal mining has been undertaken in the Gunnedah Basin for over 120 years, principally in the southern part of the basin. It is noted that Narrabri Coal Project would represent the commencement of coal mining in the more northerly part of the Gunnedah Basin. This subsection provides a brief overview of this history as well as relevant information on other operational, approved and proposed coal mines within the Gunnedah/Boggabri area.

There are a number of operating coal mines in the Gunnedah Basin, as well as a number of coal projects that have been approved and yet to be commenced, coal deposits yet to have an associated coal mine approved and a number of closed mines, most of which are depicted on **Figure 1.1**. A number of the operational and proposed projects are owned and managed by Whitehaven Coal Mining Pty Ltd (WCM) or their subsidiary companies and are as follows.

#### **Operating and Producing Coal**

- Whitehaven Coal Mine owned by WCM (Operational until approximately 2008).
- Werris Creek Coal Mine owned by Werris Creek Coal Pty Ltd, a company with some directors common with WCM.
- Whitehaven Coal Handling and Preparation Plant (CHPP) owned by WCM. The CHPP currently processes coal from Whitehaven Coal Mine and Tarrawonga Coal Mine. This plant is also intended to accept coal from future projects in the Gunnedah area.
- Tarrawonga Coal Mine owned by Tarrawonga Coal Pty Ltd, a joint venture between WCM and Idemitsu Boggabri Coal Pty Ltd (IBC).
- Boggabri Coal Project approved for development by IBC, the joint venture partner of WCM for the Tarrawonga Coal Mine.



### **Closed / Inactive Coal Mines**

- The former Gunnedah Colliery now owned by WCM.
- Preston Colliery formerly operated by Centennial Coal Limited.
- Vickery Coal Mine formerly owned by Nova Coal Pty Ltd.

### **Identified Coal Resources –Project Approval not yet applied for**

- Belmont Coal Project proposed by WCM.
- Sunnyside Coal Project proposed by Namoi Mining Pty Ltd.
- Narrabri Coal Project – Stage 2 proposed by Narrabri Coal Pty Ltd.
- Caroon Coal Project proposed by BHP Billiton.

### **Identified Coal Resource –Project Approved but not yet commenced**

- Maules Creek Coal Project proposed by Rio Tinto Pty Ltd.

## **1.4.2 History of Coal Mining in the Gunnedah Area**

The Gunnedah Basin covers an area of approximately 15 000km<sup>2</sup> extending from the Liverpool Ranges in the south to Moree in the north. The Boggabri Ridge, a north-northwest trending basement ridge, divides the basin into two sub-basins, the Mullaley Sub-basin to the west and Maules Creek Sub-basin to the east.

Coal was first discovered within the Gunnedah Basin in the late 1870s in the vicinity of Black Jack Mountain by farmers boring for water for agricultural purposes. In 1877, a well referred to as “Melville’s Well”, was sunk near Wandobah Road, about 11km south of Gunnedah, in which 2m of “good steaming coal” was discovered in what is now known as the Melville Seam. After further prospecting, notification to commence mining on the southeastern slopes of Black Jack Mountain was given in 1895 and became what is now referred to as the Gunnedah Colliery No. 1 Entry. The Preston Colliery had also opened in around 1890.

The Gunnedah and Preston Collieries mined reserves in the Hoskissons and the Melville Seams by underground methods for most of the 20<sup>th</sup> Century, producing high quality thermal and semi-soft coking coal for domestic and export markets. The Preston Colliery closed in 1998 and the Gunnedah Colliery in mid 2000 as economic coal reserves in both collieries were exhausted.

In the Maules Creek Sub-basin, significant coal deposits have been identified. The Vickery Coal Mine, an open cut mine, was operated between 1991 and 1998 and the site is now fully rehabilitated. The Vickery and Whitehaven Open Cut Coal Mines have operated in an area to the southeast of Boggabri. To the northeast of Boggabri, two large scale multi-seam open cut mining developments have been approved, namely the Boggabri Coal Project (owned by IBC) and the Maules Creek Project (owned by Coal and Allied Operations Pty Ltd). IBC have commenced the development of the Boggabri Coal Project (located directly north of the Tarrawonga Coal Mine) which, along with the Maules Creek Project, had previously been deferred awaiting improved market conditions.

Large reserves of coal remain in the Mullaley Sub-basin, including the Narrabri coal resource.



### 1.4.3 WCM's Involvement

WCM has secured long-term markets for the coal produced from the Gunnedah Basin and intends to increase production to expand these markets principally in Japan and other Asian countries. The low ash and low sulfur content of the coal provides further potential for the coal to be used in blends with other coals, eg. for use in steel mills, power utility, and general industrial markets. In particular, the low sulfur content of the coal is attractive for blending to enable higher sulfur coals to meet strict environmental standards.

The Whitehaven Coal Mine has less than 18 months of production left, hence the requirement by WCM and the associated companies to identify and obtain approval for a number of additional coal projects, including the Narrabri Coal Project, to ensure that the markets already secured by the company can continue to be provided with high quality Gunnedah Basin coal.

## 1.5 ENVIRONMENTAL MANAGEMENT AND DOCUMENTATION

### 1.5.1 Environmental Management

On-going environmental management at the proposed Narrabri Coal Project, including the Proponent's performance with respect to this document and the implementation of any lease, licence or project approval conditions, would be the responsibility of the Proponent's Area Manager. The Mine Manager would be responsible for day-to-day on-site supervision including the integrated implementation of all environmental safeguards identified in this document and additional documentation developed throughout the life of the mine. Assistance would be provided by specialist consultants as and when required.

The Proponent is committed to undertaking all component activities in a responsible and proactive manner which:

- (i) enables the co-existence of the various land uses in the area;
- (ii) is environmentally and socially responsible; and
- (iii) minimises any real or perceived impacts on other members of the community. Central to this approach would be regular contact with neighbours, an open-door policy, and a willingness to openly discuss actual or perceived problems and to implement appropriate changes to operational procedures.

### 1.5.2 Environmental Documentation

Successful environmental management invariably involves regular, organised documentation to ensure that, irrespective of personnel changes, all aspects of planning, environmental control, monitoring and responses to problems are properly recorded.



Should a mining lease be granted for the proposed Narrabri Coal Project, the Proponent would be committed to the Mining, Rehabilitation and Environmental Management Process (MREMP) managed by the DPI (MR) with input from other relevant government agencies. This process involves the preparation of:

- a Mining Operations Plan (MOP) to provide more detailed mining design and operational information; and
- an Annual Environmental Management Report (AEMR) to record operational progress and all relevant environmental issues on an annual basis.

## **1.6 MANAGEMENT OF INVESTIGATIONS**

The preparation of this document has involved a study team managed by Mr Rob Corkery, M.Appl.Sc., B.Appl.Sc (Hons), Principal of R.W. Corkery & Co Pty. Limited, assisted by other staff members, namely:

- Miss Kim Ferguson, B.Env.Sc (Hons); and
- Mr Alex Irwin, B.Sc. (Hons).

On behalf of the Proponent, Mr Keith Ross (Managing Director) and Mr Chris Burgess (Area Manager) both of Narrabri Coal Pty Ltd, and Mr David McConnell (Mine Manager – Tarrawonga Coal Mine) provided further technical information on the proposed development and assisted with finalising the document.

Additional mine design and geology information has been provided by Mr Jeff Beckett of Belford Dome Resource Assessment and Mr Paul Buddery of Mining Geotechnical Services Pty Ltd.

Strong emphasis has been placed upon a multi-disciplinary team approach to the design of the project, the description of the existing environment and resultant impact assessment. The following consultancy firms were commissioned by the Proponent to prepare nominated specialist consultant studies for the project.

- Surface Water Assessment: WRM Water and Environment Pty Ltd  
(Mr Greg Roads – BE (Hons), MIEAust).
- Groundwater Assessment: GHD Pty Ltd  
(Ms Genevieve Foley – M.Sc, B.Sc (Hons)).  
(Mr Robert Virtue – B.App.Sc.(Geol)).
- Ecology Assessment: Ecotone Ecological Consultants Pty Ltd  
(Mr Brian Wilson – B.App.Sc).
- Aboriginal Heritage Assessment: Rob Paton Archaeological Studies Pty Ltd  
(Mr Robert Paton – BA (Hons)).  
(Mr Peter Madden –BA (Hons)).



- Soils Assessment: Geoff Cunningham Natural Resource Consultants Pty Ltd  
(Mr Geoff Cunningham – B.Sc (Hons)).
- Air Quality Assessment: Heggies Australia Pty Ltd  
(Mr Damon Roddis – B.Sc (Hons)).
- Noise and Vibration Assessment: Spectrum Acoustics Pty Ltd  
(Dr Neil Pennington – PhD, B.Sc (Physics), B.Math (Hons)).
- Geotechnical Assessment: Mining Geotechnical Services Pty Ltd  
(Mr Paul Buddery – B.Sc (Mining Eng.)(Hons), Ph.D (Rock Mechanics)).
- Socio-Economic Assessment: Key Insights  
(Ms Ellen Davis-Meehan – B.Ed., M.Ed. Studies).
- Geology: Belford Dome Resource Assessment  
(Mr Jeff Beckett – B.Sc (Geology)).

In addition to these studies:

- a peer review of the groundwater assessment was undertaken by Mr Ross Best (BE (Hons), M.Eng.Sc., MIEAust, CPEng), Senior Principal Engineer of Coffey Geotechnics Pty Ltd; and
- a technical memorandum providing a concept plan for a water conditioning system at the Narrabri Coal Project was compiled by Mr Mazin Husari (M.Sc.(Chem), MIEAust, CPEng), Principal Water and Wastewater Engineer of Parsons Brinckerhoff Australia Pty Ltd.

The groundwater peer review is incorporated at the end of the Groundwater Assessment (Part 2 of the *Specialist Consultant Studies Compendium*) and the technical memorandum of Parsons Brinckerhoff is included as **Appendix 4** of the *Environmental Assessment*.



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