



Coalpac Pty Ltd

ABN: 91 003 558 914

PRELIMINARY ENVIRONMENTAL ASSESSMENT

OF AN

**APPLICATION TO MODIFY PROJECT
APPROVAL 05_0065**

**TO IMPROVE COAL RECOVERIES THROUGH COAL
AUGERING**

AND

INCREASE PRODUCTION LEVELS

Prepared by:



R.W. CORKERY & CO. PTY. LIMITED



Coalpac Pty Ltd

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20 April 2007

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Ref No. 708/08b



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SECTION 1

INTRODUCTION

PREAMBLE

This section introduces a preliminary Environmental Assessment for a proposal by Coalpac Pty Ltd to modify Project Approval 05_0065. The modification would allow for an improvement in coal recovery through coal augering and an increase in production levels from the current approved level of 350 000 tonnes per year to 500 000 tonnes per year. This section outlines and reviews:

- *the scope and format of the document;*
- *the objectives of, and relevant background to, the proposed modification;*
- *Coalpac as the Proponent and its business plan; and*
- *the current status of operations at the Invincible Colliery.*



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1.1 REPORT SCOPE AND OBJECTIVES

This preliminary Environmental Assessment (EA) has been compiled by R.W. Corkery & Co. Pty. Limited on behalf of Coalpac Pty Ltd (Coalpac) to provide the Director-General of the Department of Planning with an overview of the proposed modification to Project Approval PA 05_0065, the environmental issues likely to be affected, and a preliminary assessment of the potential impacts associated with the modification.

Figure 1.1 presents the location of the Invincible Colliery, approximately 20km northwest of Lithgow and 2km southeast of Cullen Bullen.

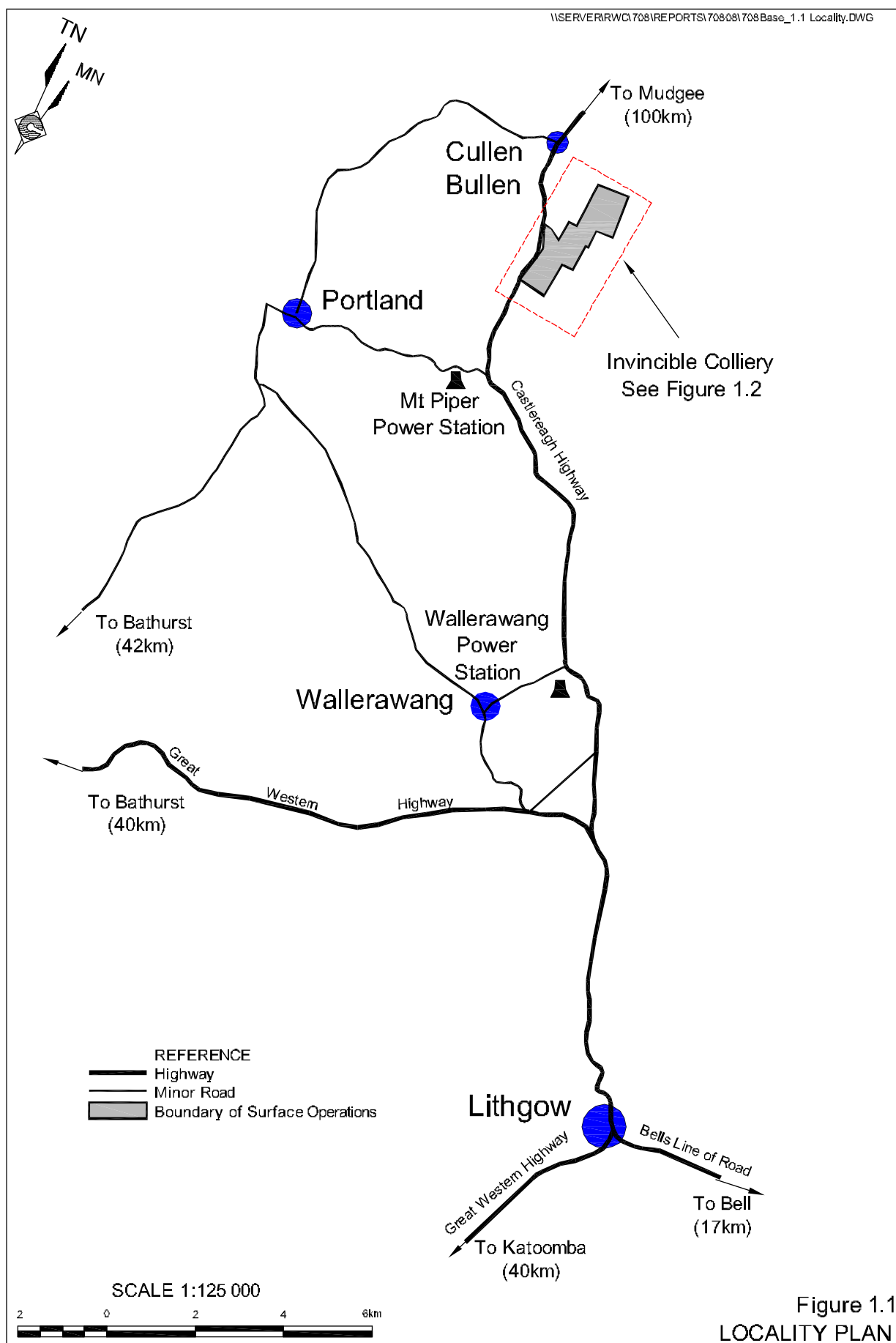
The principal objective of this preliminary EA is to provide the Director-General with sufficient information such that, in consultation with other government agencies, the specific requirements for the preparation of an *Environmental Assessment* can be compiled, (“the Director-General’s Requirements”).

This preliminary EA has been completed in three sections.

- Section 1: This section introduces the proposed modification to improve coal recovery through the incorporation of coal augering methods and increase annual production to 500 000 tonnes per year. The Proponent, Coalpac Pty Ltd, is introduced and relevant background on the proposed modification, together with information on the existing status of operations at the Invincible Colliery.
- Section 2: This section provides information on the coal augering method of coal recovery. The proposed location and limits of the coal augering to be undertaken in conjunction with current open cut mining is presented. The likely environmental issues arising from the augering methods are identified and for each environmental issue identified, a preliminary assessment of the likely changes to the impacts of the Invincible Open Cut Coal Mine are provided.
- Section 3: This section provides information on current production levels and the proposed modification required to increase production from the currently approved 350 000 tonnes per year to the proposed 500 000 tonnes per year. Similar to Section 2, the environmental issues associated with the proposed production increase are identified and a preliminary assessment of the likely changes to environmental impacts provided.

The information provided in the preliminary EA will ultimately be incorporated, into a comprehensive *Environmental Assessment* addressing the key environmental issues, to be prepared in accordance with the provisions of Part 3A, Section 75 of the *Environmental Planning and Assessment Act 1979*.





1.2 BACKGROUND TO THE PROPOSED MODIFICATION

Invincible Colliery is located immediately east of the Castlereagh Highway, approximately 20km northwest of Lithgow. Underground mining operations began in 1901 and ceased in 1998, due to low coal prices, when it was placed on a care and maintenance program. Soon after, a small open cut mining operation was commenced before ceasing in 2001, when again the Invincible Colliery in its entirety was placed into a care and maintenance program.

In May 2005, Coalpac Pty Ltd secured a contract from Delta Electricity to supply coal to the Mt Piper Power Station over a three year period. An Application for Project Approval was subsequently submitted to the Department of Planning (DoP) for approval of the extension of open cut operations at Invincible Colliery. Project Approval (PA 05_0065) for the extension was granted on 7 September 2006 by the Minister for Planning. **Figure 1.2** illustrates the approved area of the Invincible Open Cut Coal Mine Extension within ML68 and the mining blocks completed and not yet mined.

PA 05_0065 includes two conditions restricting the operation of the Invincible Open Cut Coal Mine Extension, namely:

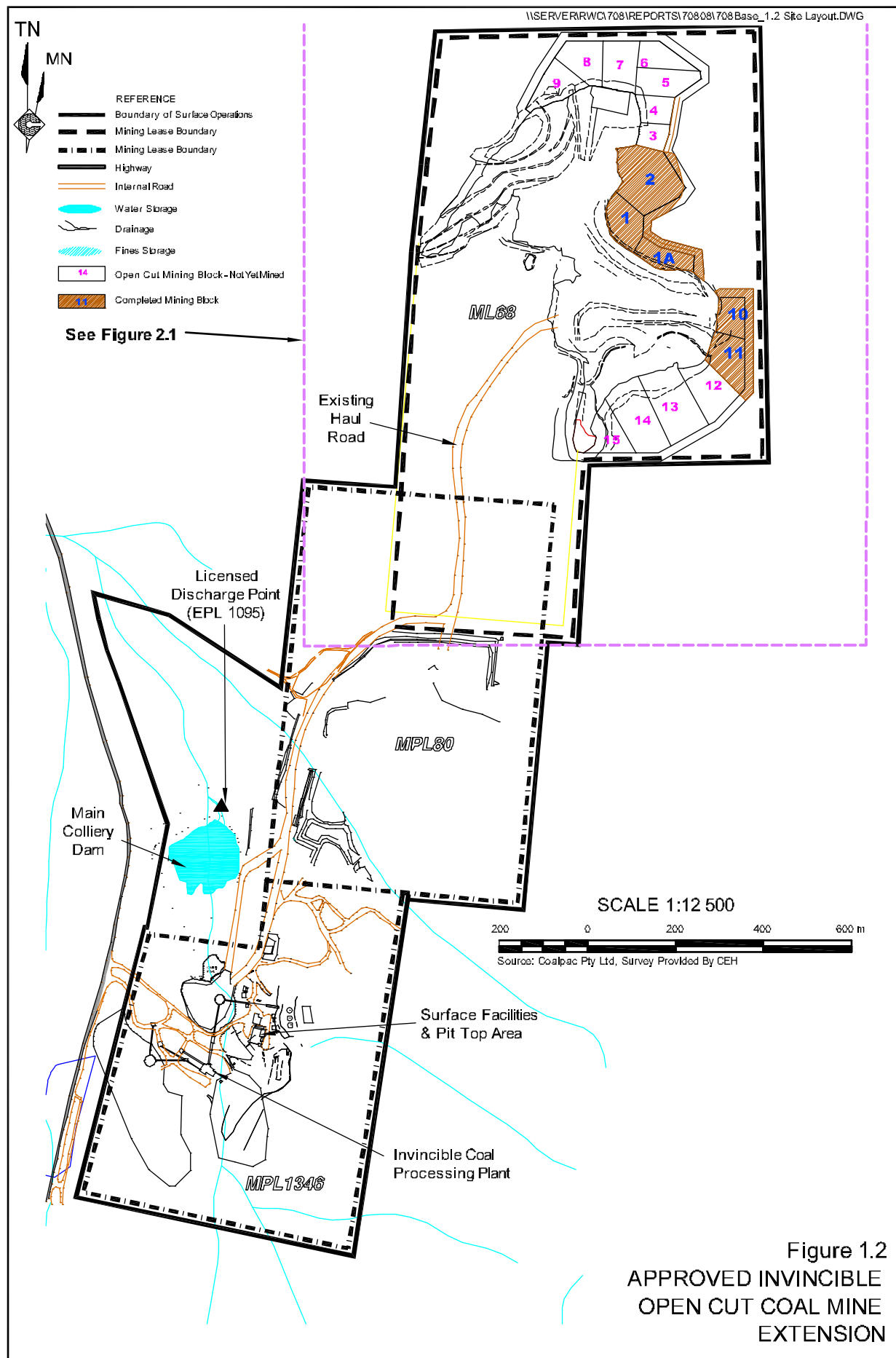
- Condition 2(6) of PA 05_0065 restricts production to 350 000tpa; and
- Condition 2(2) restricts coal mining to open cut methods, whilst the coal augering technique is an open cut mining method, it was not assessed in the original *Environmental Assessment* for the then proposed open cut coal mine extension (CEH, 2006).

Since commencing the open cut mine extension, there has been a greater than anticipated demand for the coal for the Mt Piper Power Station, with the approved production limit of 350 000tpa likely to be reached in advance of 12 months from project approval. In order to maintain supply at this greater than anticipated demand (and approved rate of production), Coalpac proposes to increase production from the open cut. It is proposed to achieve this increase as follows.

- (i) By increasing the coal recovery rate through the use of coal augering methods. This would allow coal contained within the Lithgow and Irondale Seams, beyond the limit of viable open cut mining methods, to be recovered.
- (ii) By increasing the number and general efficiency of mining equipment operated within the open cut.

A parallel component in increasing production to the required quality specifications was the need to re-commence washing a proportion of the coal at the on-site Invincible Coal Processing Plant. Through discussions and correspondence with the Department of Planning, it was determined that a separate application to modify PA 05_0065 under Section 75W of the *Environmental Planning and Assessment Act, 1979* would have to be made and that this requires the preparation of an *Environmental Assessment*, albeit brief and focussed on the coal washing activity, water management and reject management. This application was lodged with the Department of Planning on 2 April 2007.





1.3 THE PROPONENT AND ITS BUSINESS PLAN

Coalpac Pty Ltd (Coalpac) was established in 1989 and has successfully owned and operated coal mines in the Lithgow district for over 18 years. Coalpac has variously operated Invincible Colliery as a continuous miner underground operation and an open cut mine. In November 2006, CET Resources (CETR) purchased a controlling interest in Coalpac with the aim to fully realise the potential of Invincible Colliery's extensive coal reserves through innovation and efficiency and to use the mine as a base from which to grow its operations in the Western Coalfield of NSW.

CETR has extensive experience in the design, manufacture and operation of auger mining systems. CETR's sister company, Coal Augering Services (CAS), offers a contract auger mining service with two machines currently operating in Queensland. CAS has operated since September 2003 and has enjoyed an excellent safety record over this period with zero Lost Time Injury (LTI) incidents.

The combined operational experience and expertise of Coalpac and CETR provides the necessary support to successfully introduce auger mining to Invincible Colliery.

It is Coalpac's business plan to progressively re-establish Invincible Colliery as a medium term supplier of quality coal for the local power stations at Mt Piper and Wallerawang and for domestic / overseas nut coal customers. Coalpac intends to mine coal by both open cut and underground methods and progressively ramp up production to an annualised rate of 1.2 million tonnes per year or 100 000 tonnes per month. Following washing of a proportion of the coal mined, annual yields would ultimately in the order of 700 000 tonnes of coal for thermal uses at the Mt Piper and Wallerawang Power Stations and 200 000 tonnes per year of nut coal principally for domestic coal markets and possibly minor overseas markets.

Coalpac's plans to ultimately reach the project annualised production of 1.2Mtpa or 100 000 tonnes per month, would be achieved through the mining of coal resources recoverable by:

- (i) open cut and auger mining methods; and
- (ii) underground methods.

Over the next 5 years, Coalpac proposes to mine up to 6 million tonnes of coal from the following areas within the Colliery.

- (i) Existing Open Cut Mine Extension (Recovery of open cut coal (as approved) and coal recovered by auger mining methods. *This Preliminary Environmental Assessment relates to this component of Coalpac's Plan.*
- (ii) Further extensions around the areas previously mined to recover coal by open cut and auger mining methods. *A project application for this activity is planned in the 3rd quarter of 2007.*
- (iii) Underground mining of coal from un-mined areas within Invincible Colliery. *The recovery of coal by underground methods is an approved activity at Invincible Colliery.*



1.4 EXISTING OPERATIONS

Since obtaining approval for the open cut coal mine extension, mining has progressed generally as proposed in CEH (2006). Mining is being undertaken by conventional operations using a combination of trucks, excavators and loaders to recover coal from the Lithgow, Lidsdale and Irondale Seams. A Mining Operations Plan (MOP) has been prepared providing detailed plans for the mining and rehabilitation of the open cut extension and **Figure 1.2** illustrates the completed, current and future open cut mining blocks of the Invincible Open Cut Coal Mine.

Since September 2006, the coal produced by the Invincible Colliery has been despatched principally to the Mt Piper Power Station. Limited quantities of coal have also been transported to other domestic customers. The despatch of coal to domestic customers is compliant with Condition 2(6) of PA 05_0065 which allows for the transportation of up to 200 000tpa by road to domestic destinations other than the Mt Piper or Wallerawang Power Stations.

In accordance with various conditions of PA 05_0065, the following Management Plans and Monitoring Programs have been prepared and submitted to the Department of Planning for approval by the Director-General.

- Environmental Management Strategy.
- Blast Management Plan.
- Coal Haulage Vehicle Management Plan.
- Cultural Heritage Management Plan.
- Noise Monitoring Program.
- Air Quality Monitoring Program.

The following additional environmental management plans and programs were submitted to the Department of Planning for approval by the Director-General by 7 March 2007.

- Environmental Monitoring Program.
- Site Water Management Plan.
- Rehabilitation and Environmental Management Plan.

Rehabilitation of completed mining blocks has yet to commence in anticipation of a determination on the proposed incorporation of coal augering methods into the highwall of the approved open cut.



SECTION 2

COAL AUGERING OPERATION

PREAMBLE

This section describes the proposed coal augering techniques that would be undertaken from the highwall of the Invincible Open Cut Coal Mine Extension. An overview of the proposed augering operations is provided and the key environmental issues identified.

The section concludes by presenting a preliminary assessment as to how impacts on the environment resultant from the current open cut mining operation are likely to change.



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2.1 INTRODUCTION

2.1.1 Auger Mining Method

Auger mining techniques enable coal to be mined without the need for overburden or interburden removal thereby reducing the overall stripping ratio applicable and hence, the cost per unit coal mined. The auger is effectively a large diameter drill which bores into the seam to recover coal. It requires the formation of a bench adjacent to the coal seam to be worked, approximately 30m wide and of sufficient length to safely operate the auger drill and ancillary equipment (see Section 2.1.2) and store the coal.

2.1.2 Auger Mining Equipment

The mining equipment for the proposed coal augering method of extraction comprises equipment specifically designed for the purpose. A description of the equipment is provided below. **Plate 2.1** presents an example of the coal augering equipment that would be used at the Invincible Open Cut Coal Mine Extension.

CET/BryDet AM1500
Series Coal Auger
comprising:

- 1500 hp. CAT diesel engine for powering the drill string;
- dip capability of 20 degrees, including hydraulic tilt operators cab, auger flight hydraulic hold back forks and extending jib hoist for flight handling;
- provision for auger alignment to control hole direction and grade;
- minimum of 200 m of auger flights;
- cutter head to drill up to 1.9 m diameter auger holes;
- Elevating Stacker Conveyor; and
- required ancillary equipment.



Plate 2.1: Coal Augering Machine

2.2 OVERVIEW OF THE PROPOSED AUGER MINING OPERATIONS

Due to the increasing overburden strip ratios, the auger mining method is the only safe, economical and environmentally stable mining method that can recover the 400 000 tonnes of coal that is located beyond the highwall of the Invincible Open Cut Coal Mine Extension. Annual production from the auger is initially planned to be in the order of 150 000tpa to 200 000tpa. The auger mining operation would progress as follows.

Following the completion of conventional open cut operations within each mining block, a bench would be established to access the Irondale Seam. As noted in Section 2.1.1, the bench would be up to 30m in width. The establishment of benches for auger machine access would generally follow the open cut mining sequence (see **Figure 2.1**). It is also noted that some recovery blocks would be established from the former highwall, once uncovered.

Once the bench is established, the auger machine would be set up at the coal seam face in the highwall. The cutter head would advance into the coal face by addition of individual auger flights of approximately 5.5m length and application of suitable rotation and thrust. The flight management system is integral to the machine and is controlled by the operator located in an operator's cab. Extracted coal is directed from the auger to a cross chain conveyor before transfer to an elevating conveyor for stacking or loading directly into trucks.

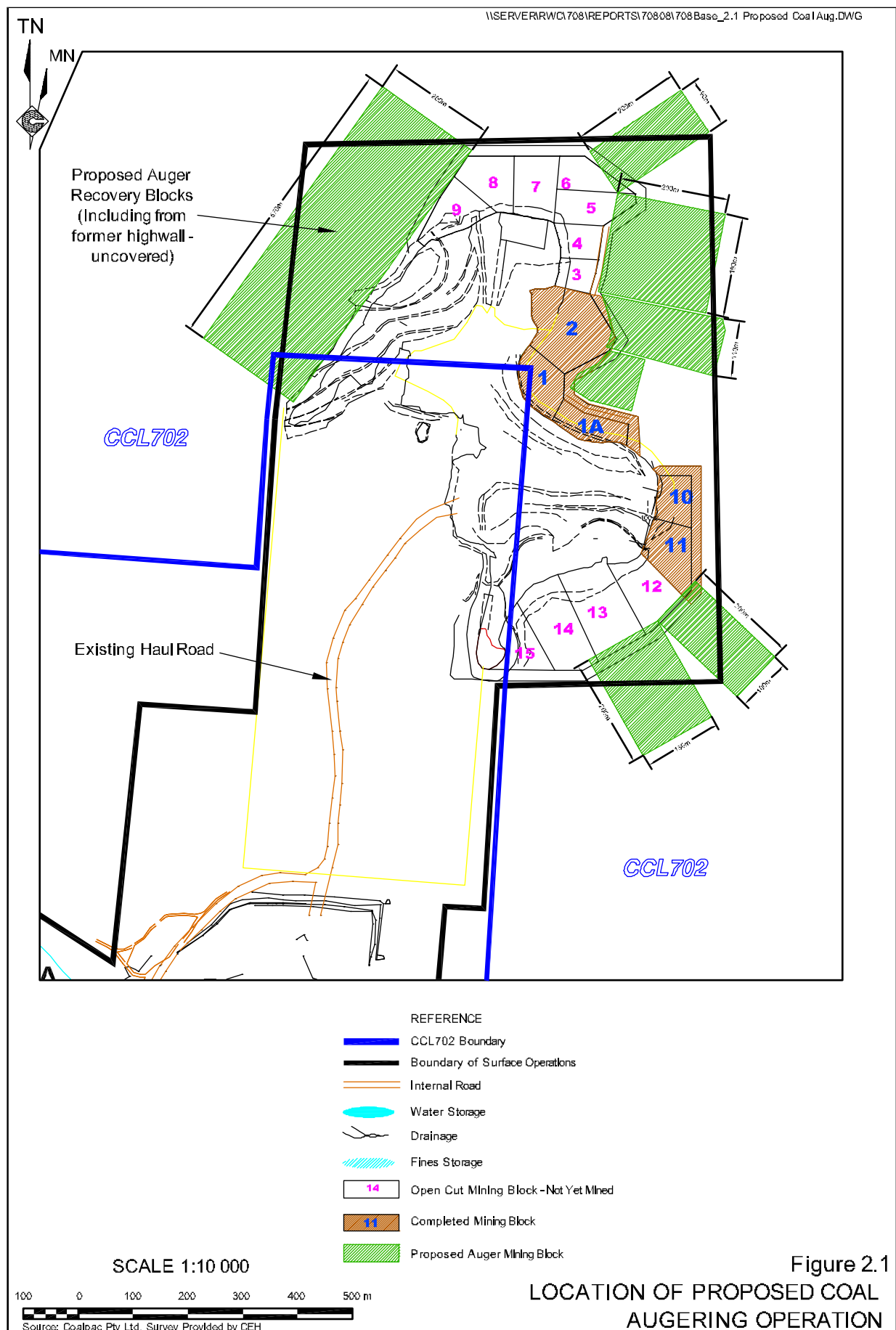
A single pass operation is proposed, drilling a maximum 1.9m diameter auger hole subject to an anticipated seam thickness of 2.1m. It is anticipated that the auger holes would be drilled to a maximum length of 200m, with an average length of 180m (where not limited by the proximity of existing geological structures or particular surface features). A nominal 0.8m web would be left between the auger holes to maintain the stability of the highwall and prevent subsidence. This auger mining plan is based on geotechnical analysis of the isolated coal pillars to ensure stability of the highwall and overlying strata. Experience has shown that this can be effectively managed and the relatively low final highwalls (typically <20m) and strong overlying strata at Invincible Colliery will provide a good application for the mining method.

The active bench would typically dip gently towards the highwall and would be bunded at the low wall which will facilitate effective water management.

Once the auger machine moves along the coal face, the mouth of the exposed auger holes would then backfilled with either overburden material or coarse rejects back-loaded from the Invincible Coal Processing Plant. After the completion of each block, the open cut can the final landform would be formed and revegetated.

The final landform following auger mining will be the same as originally approved.





2.3 ENVIRONMENTAL ISSUES

2.3.1 Introduction

Issues requiring consideration as to how they might influence existing impacts on the environment include the following.

2.3.2 Noise

Noise monitoring was recently undertaken (6 February 2007) by ERM at locations on the Invincible Colliery site and at the nearest residences to the open cut (ERM, 2007). While the monitoring results could not determine the direct noise contribution of the open cut operations, due to the high contribution of noise from traffic on the Castlereagh Highway, modelling using the noise levels recorded on and off the site, was able to establish that during calm and adverse wind conditions (easterly), noise levels are calculated to be at or below the criteria of DA 05_0065 at the “Hillview” residence and in Cullen Bullen. A marginal 2dB(A) exceedance¹ was calculated for the “Billabong” residence during adverse (easterly) wind conditions.

While the open cut is currently operating in compliance with the noise criteria of DA 05_0065, the auger machine would require the use of additional equipment within the open cut area. Depending on the noise levels generated by this type of equipment, and the likely arrangement of vehicles to undertake the auger mining, noise generated by the Invincible Open Cut Coal Mine may increase. This will be addressed comprehensively in the EA.

2.3.3 Air Quality

While the auger process is unlikely to be a significant generator of dust and other particulate matter, there may be some incidental increase to the surrounding environment.

2.3.4 Water

Depending on the location and arrangement of the auger mining equipment, there may be some variation to surface water flows within and adjacent to the open cut area. While unlikely, these changes may result in the discharge of dirty or contaminated water from the open cut and into natural drainage.

¹ It is noted however that a 2dB(A) exceedance would not be considered a non-compliance according to the NSW Industrial Noise Policy.



2.3.5 Subsidence

The geotechnical properties of the highwall need to be considered as any subsidence may impact on the local vegetation and water flows on land beyond the perimeter of the highwall.

2.4 LIKELY CHANGES IN ENVIRONMENTAL IMPACTS

2.4.1 Introduction

The following preliminary assessment of the likely change in environmental impacts as a consequence of the coal augering activities has been made with reference to those issues identified in Section 2.3.

2.4.2 Noise

The location of the auger machine at the same elevation as the coal seam, ie. at least 20m below surface, and immediately adjacent to the highwall of the open cut, would provide significant acoustic shielding of the noise generated. Notwithstanding this, the auger machine sound power level would be comparable to that of a surface drill and therefore one of the quieter pieces of equipment within the open cut. This additional contribution of noise would therefore be unlikely to increase overall noise levels generated by the open cut operation, identified as compliant under all meteorological conditions by recent monitoring and modelling (ERM, 2007).

In order to confirm this preliminary assessment, the sound power level of the auger machine will be confirmed and the contribution and change to the previously modelled noise levels of the open cut (ERM, 2006) calculated.

2.4.3 Air Quality

The in-situ moisture of the coal would reduce the potential for dust generation by the augering process. While additional activities on unsealed areas of the open cut would be required to create and maintain the bench for the auger, these areas would be managed in accordance with the existing dust suppression of the open cut, ie. through regular watering, and would therefore be unlikely to contribute significant additional dust or particulate matter to the atmosphere. A further safeguard against elevated dust levels would be the below surface elevation of the augering activities, with the larger dust particles likely to fall out of the atmosphere as deposited dust before rising to elevations above surface level.

Considering the low intensity activities of the auger machine and the existing dust suppression and dust monitoring activities undertaken by Coalpac, no further assessment of impacts on air quality is proposed.



2.4.4 Water

Being located on benches against the highwall of the open cut, the auger machine and associated equipment would be largely isolated from surface water flows of the Invincible Colliery site. Assuming the implementation of the water management controls contained within the Invincible Colliery Site Water Management Plan, specifically the construction and maintenance of settlement ponds below the existing rehabilitated slopes of the open cut, the introduction of coal augering activities would have little impact on site or local water quality.

It is proposed that the existing Site Water Management Plan be updated as part of the final *Environmental Assessment* to incorporate the proposed augering activities.

2.4.5 Subsidence

The nominal web between the auger holes would be 0.8m in order to maintain the stability of the highwall above the auger holes and prevent subsidence. This web width has been determined based on geotechnical analysis of the isolated coal pillars to ensure stability of the highwall and overlying strata. The ability to operate an auger mining operation without subsidence has been demonstrated at other mines, with Coalpac, through their majority owner CETR and sister company CAS, having extensive experience in operating and managing auger mining operations.

Additional detail on the geotechnical assessments conducted by Coalpac in the design of the auger operations will be presented in the final Environmental Assessment for the proposed modification to DA 05_0065.



SECTION 3

INCREASED PRODUCTION

PREAMBLE

This section describes Coalpac's proposal to increase both monthly and annual production from the Invincible Open Cut Coal Mine Extension. An overview of the proposed production increase is provided and the key environmental issues identified.

The section concludes by presenting a preliminary assessment as to how impacts on the environment resultant from the current open cut mining operation are likely to change.



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3.1 EXISTING OPERATION

In October 2006, following receipt of Project Approval 05_0065, Coalpac re-commenced open cut mining operations at the Invincible Colliery. The Invincible Colliery had been under care and maintenance since 2003.

The open cut coal mined from the approved open cut mine extension is currently transferred to a ROM stockpile area. From the ROM stockpile, road registered trucks, generally with 25t to 30t capacity are loaded and despatched principally to the Mt Piper Power Station via the Castlereagh Highway.

Currently, and in accordance with Condition 2(7), no coal from the Open Cut Coal Mine Extension is washed at the Invincible Coal Processing Plant. This is the subject of a separate application to the Department of Planning and it is anticipated that the washing of coal would commence during the second quarter of 2007. Ultimately, the ability to wash the coal recovered from the open cut mine extension would be an important factor in maintaining and expanding domestic markets and potentially establishing export markets.

At current production rates, the approved production limit of 350 000t would be reached prior to the completion of the first 12 months of operation from the receipt of DA 05_0065. At this time, production would cease, despite the fact Coalpac has identified additional markets for their coal, unless the proposed modification to DA 05_0065 was approved.

3.2 OVERVIEW OF THE PROPOSAL

Coalpac intends to progressively increase the production of coal from the Invincible Open Cut Coal Mine Extension from the current approved level of 350 000 tonnes per year 500 000 tonnes per year. This would be achieved throughout 2007 and 2008 principally through the commencement of auger mining methods (see Section 2) and generally increasing the efficiency of the mining units through reduced stand-by time, etc.

Table 3.1 presents a summary of the current and proposed mining fleet to be operated within the Invincible Open Cut Coal Mine Extension.

All coal produced would be transported from the Invincible Colliery by road (via the Castlereagh Highway) with the bulk of coal produced to be despatched to the Mt Piper and Wallerawang Power Stations along established coal transport routes. Similar to the current conditional requirement relating to the destination of coal products, Coalpac proposes to continue to transport up to 200 000t of coal each year to customers other than the two local power stations. This would involve truck movements either to domestic destinations eg Nowra / Botany or Springvale Siding for export orders.



Table 3.1
Current and Proposed Mining Fleet

Equipment Type	Current Number ¹	Proposed Number ²
Front-end Loader (Cat 992)	1	2
Dozer (Cat D11)	1	1
Elevating Scraper (Cat 623F)	1	1
Highway Dump Truck (Cat 773B – 50 tonne)	3	4
Grader (Cat 14G)	1	1
Crushing Plant (Gundlach – in-house manufacture)	1	1
Water Cart	1	1
Surface Drill (Reeddrill GD2CD)	1	1
Coal Auger (CET/BryDet AM1500 Series)	0	1
Sources: 1 – CEH (2006) 2 – Coalpac Pty Ltd		

3.3 ENVIRONMENTAL ISSUES

3.3.1 Introduction

Issues requiring consideration as to how they might influence existing impacts on the environment include the following. These issues have been identified and prioritised based upon observations by the Proponent during operations to date.

3.3.2 Noise

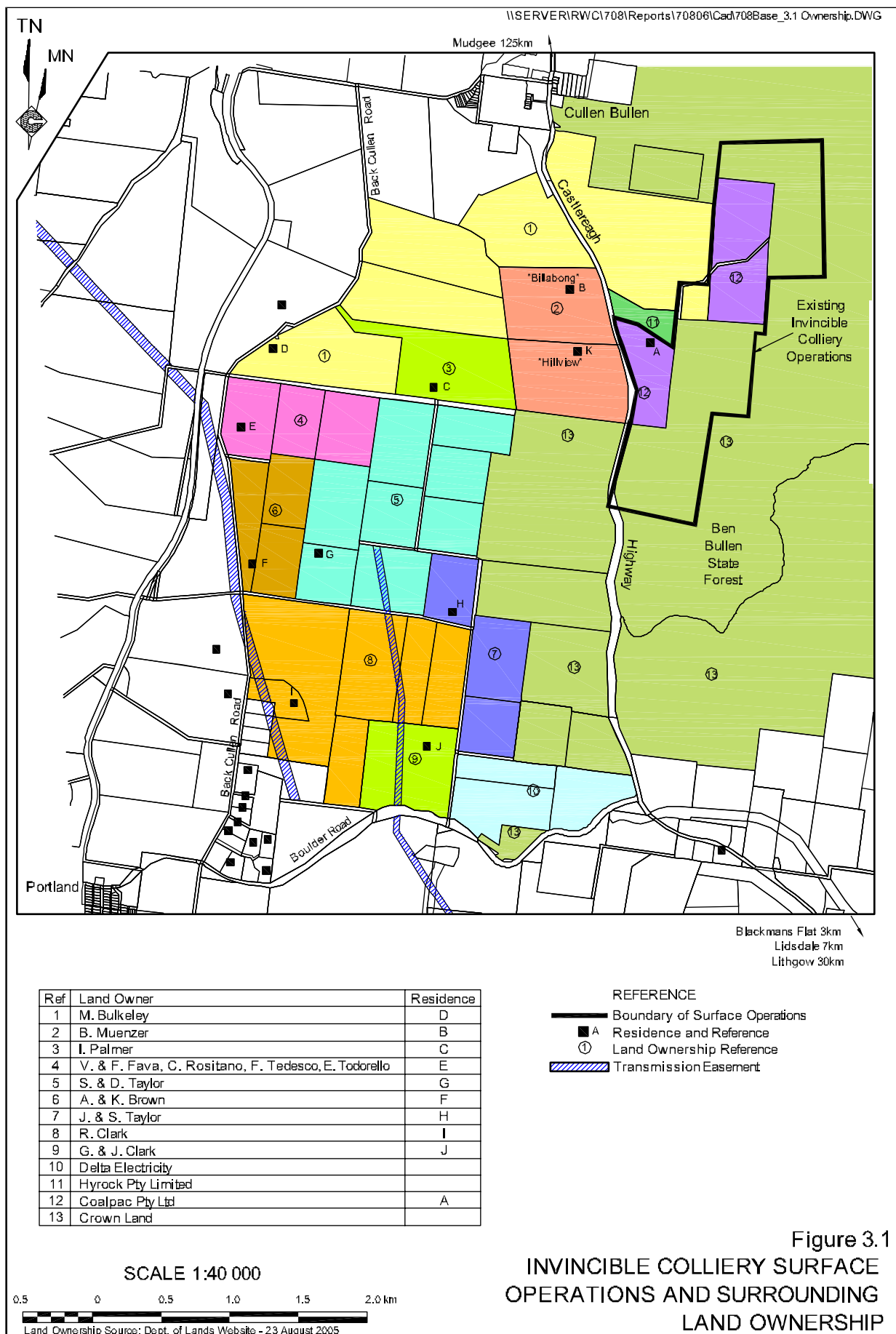
As noted in Section 2.3.2, noise monitoring and modelling recently undertaken (ERM, 2007) established the current open cut operations at the Invincible Colliery are compliant with the noise criteria of DA 05_0065 under all meteorological conditions.

While the open cut is currently operating in compliance with the noise criteria of DA 05_0065, the proposed increase in production would require an increase in the fleet of mobile equipment to be used within the open cut. This would be likely to increase noise levels generated by the open cut and requires consideration of the magnitude of the increase and consequent impacts on the nearest residences (“Hillview” and “Billabong”) and the village of Cullen Bullen. **Figure 3.1** presents the ownership of land and residences surrounding Invincible Colliery Surface Operations.

3.3.3 Air Quality

As a consequence of the increased mining rate, the level of dust and other particulate material likely to be generated by the open cut would also increase. While it is understood, monitoring of deposited dust and PM₁₀ being undertaken at the open cut has established that these levels are below criteria, further consideration of the potential increase, and the impact of this on surrounding residences and the local environment needs to be considered.





3.3.4 Water

The proposed increase in production would not result in any change to the location or orientation of the open cut operations, simply an increased rate of mining and processing. As such, it is unlikely the proposed increase in production would have any major implication on the quality of water exiting the site and entering natural drainage (assuming the implementation of controls identified in the Invincible Colliery Site Water Management Plan).

The proposed increase in production would, however, require an increase in water use for dust suppression and coal washing (if approved). As such, there could therefore be an impact on the availability of water for both these activities and ultimately the quantity of water discharged to environmental flows downstream of the Invincible Colliery.

3.3.5 Traffic

An increase in production would require an increase in the number of trucks entering and exiting the site each day. While the Castlereagh Highway is currently operating below the capacity of the road, the proposed increase in truck numbers generated by the Invincible Colliery has the potential to impact on traffic congestion and possibly safety. Local residents of local towns and villages such as Lidsdale and Blackmans Flat have also raised concerns to other coal mine proposals in the local area regarding the impact that the (perceived) increasing number of trucks has on their amenity and general lifestyle and well-being.

3.4 LIKELY CHANGES IN ENVIRONMENTAL IMPACTS

3.4.1 Introduction

The following preliminary assessment of the likely change in environmental impacts as a consequence of the proposed production increase has been made with reference to those issues identified in Section 3.3.

3.4.2 Noise

As noted in Sections 2.3.2 and 3.2.2, noise monitoring and modelling recently undertaken (ERM, 2007) established the current open cut operations of at the Invincible Colliery are compliant with the noise criteria of DA 05_0065 under all conditions.

ERM also completed preliminary noise modelling of the likely impacts of the proposed increase in mining fleet associated with the production increase. The preliminary modelling indicates that noise received at the two nearest residences would increase by an estimated 2dB(A). Under calm and non-adverse weather conditions, this level of increase in noise levels would not result in any exceedance of the noise criteria of DA 05_0065. However, under adverse (easterly) wind conditions, a 2dB(A) increase may lead to an exceedance of the nominated criteria.



The *Environmental Assessment* will provide additional detail on the noise modelling and consider mitigating measures or additional controls that could be implemented to ensure compliance during all meteorological conditions.

3.4.3 Air Quality

The level of dust and particulate matter generated by the Invincible Open Cut Coal Mine Extension following the proposed increase in production is likely to increase as vehicle movements, the number and size of stockpiles and areas of disturbance generally increase. However, assuming dust suppression activities continue and are extended to account for the increase in disturbance over the open cut site, the level of increase in dust deposition and particulate matter concentration is likely to be relatively minor.

Therefore, considering monitoring data collected to date suggests the open cut extension is operating well below the nominated dust deposition and particulate matter concentration criteria of DA 05_0065, this preliminary assessment concludes that the open cut would remain compliant even following the proposed increase in production. The *Environmental Assessment* will include additional information on comparative assessments between the existing and proposed operations as well as other open coal mining operations previously assessed by R.W. Corkery & Co. Pty Limited.

3.4.4 Water

A site water balance has been established for both the existing open cut operations as well as for the proposed operation of the Invincible Coal Processing Plant. In both cases, sufficient water would be available from the harvesting of surface water, even during dry years (10th percentile rainfall years). It is also noted that in excess of 1 500ML of additional water is stored within underground workings, and that current pumping arrangements would enable access to 360kL of the water per day.

An updated water balance would be prepared for the *Environmental Assessment*, however, considering the excess water available, even during dry years, and the capability to access large volumes of groundwater, this preliminary assessment concludes sufficient water would be available cater for the increased production whilst still maintaining some environmental flows downstream of the site.

3.4.5 Traffic

Existing coal production from the Invincible Colliery generates an average of 90 truck movements¹ each day (Monday to Saturday). Approximately 85% of the existing truck fleet departing from Invincible Colliery travel to Mt Piper Power Station. The remaining 15% of trucks currently travel through Lithgow and to customers beyond the Blue Mountains. It is proposed to continue to despatch all products by road. The increased production would result in approximately 140 truck movements per day on the 4km section of the Castlereagh Highway to Mt Piper Power Station. Approximately 50 truck movements per day would continue beyond the turnoff to Mt Piper Power Station to transport up to 800 tonnes of nut coal daily along the Castlereagh Highway and the Great Western Highway to domestic customers.

¹ A truck movement refers to one way travel, ie. a return trip equals two truck movements.



To assess the impact of this increase in truck movements from the Invincible Colliery, Delta Electricity was contacted to identify the quantity of coal that is, and has been, transported between the mines north of Lithgow (“the northern mines”) and the Mt Piper and Wallerawang Power Stations. The recorded, current and proposed quantity of coal transported from the northern mines is presented in **Table 3.2**.

Table 3.2
Historic, Current and Proposed Quantities of Coal Transported Daily from Northern Mines – tonnes

		Year							
		Historic						Current	Proposed
		1980	1985	1990	1995	2000	2005	2007	2007/2008
Coal Mine Production and Transport (daily)	Airly ¹			1000					
	Ben Bullen ¹	1500	1500	1500					
	Charbon ¹	1500	1500	1500					
	Cullen Valley ¹			2000	2000	2000	2000	2000	0 ⁴
	Baal Bone ¹			2000	2000	2000	2000	2000	<2000 ⁵
	Invincible ²							1000	3600
	Ivanhoe North ³								800
	Total	3000	3000	8000	4000	4000	4000	5000	<6400
Sources:									
1 – Peter James, Delta Electricity (pers. comm.)									
2 – Coalpac Pty Ltd									
3 – R.W. Corkery & Co. Pty. Limited (2006)									
4 – Currently not producing coal (pers. comm.. I Follington – Coalpac Pty Ltd)									
5 – Low levels of production with resource to be exhausted by September 2007 (pers. comm.. I Follington – Coalpac Pty Ltd)									

Based on the historic record of coal transportation between the northern mines and the Mt Piper and Wallerawang Power Stations, the level of coal transport on the Castlereagh Highway proposed for 2007 / 2008 is not without precedent as a recorded 8 000t of coal was transported on the Castlereagh Highway each weekday in 1990.

It is considered appropriate for coal to continue to be transported to the local power stations by road, particularly Mt Piper Power Station, as there are no residences that front onto the section of the Castlereagh Highway that is used between Invincible Colliery and Mt Piper Power Station.

For the coal transported to domestic customers beyond the Blue Mountains, the delivery of coal by road is the only feasible means given the customers receiving the coal have no access to rail unloading facilities at their sites. It is further noted that trucks delivering coal also backload ash from each of the enterprises that use coal from Invincible Colliery.

A complete assessment of impacts on traffic levels and associated impacts on the amenity of affected residents along the transport route will be included in the *Environmental Assessment*. However, it is the conclusion of the preliminary assessment that these impacts would be acceptable, given coal traffic has previously operated along the proposed route at the levels proposed.



REFERENCES

CEH (2006). Craven, Elliston & Hayes (Lithgow) Pty. Limited, March 2006. *Environmental Assessment for Proposed Extension of Invincible Open Cut Mine Operations and Rehabilitation Activities, Cullen Bullen, NSW* – prepared for Coalpac Pty Ltd.

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