Bloomfield Colliery

Project Approval No. 07_0087

Extension of the Project Approval Area for out-of-pit overburden emplacement and rehabilitation, alternative haul road and powerline relocation.

Application for a Modification to the Minister's Approval Pursuant to Section 75W of the *Environmental Planning and Assessment Act 1979*

By: Bloomfield Collieries Pty Limited

Date: September 2010

Prepared by:

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ACN: 34 130 268 594

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DOCUMENT CONTROL

Reference	Revision Status	Release Date	Reviewed
Bloomfield Mine_75W Mod1_FINAL4	Rev 7	17 September 2010	SB/KH/NC

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STATEMENT OF VALIDITY

Environment Assessment prepared under Part 3A Section 75W of the *Environmental Planning and Assessment Act 1979* and Regulations (NSW).

This report has been prepared by:	Nicole Croker B. App Sc (EAM) (Hons) Director Business Environment Pty Ltd
This report relates to:	Extension of the Project Approval Area for out-of-pit overburden emplacement and rehabilitation, alternative haul road and powerline relocation. Application for Modification to the Minister's Approval Pursuant to Section 75W of the *Environmental Planning and Assessment Act 1979.*
Applicant's Name:	Bloomfield Collieries Pty Limited
Property Description:	Bloomfield Colliery - North of John Renshaw Drive, Buttai & east of Buchanan Road, Buchanan, 20 km north-west of Newcastle. Refer Report for detailed property description.
Declaration:	This Statement has been prepared in accordance with: • Part 3A of the *Environmental Planning and Assessment Act 1979* and Regulations (NSW); and • the Director General's requirements dated 14 December 2009 in relation to this environmental assessment. This Statement contains all available information that is relevant to the environmental assessment of the modification to which the Statement relates. To the best of my knowledge, the information contained in this document is neither false nor misleading.
Signed:	
Name:	Nicole Croker
Date:	10 September 2010

EXECUTIVE SUMMARY

Bloomfield Colliery is an open cut mining operation located approximately 20 kilometres north-west of Newcastle, within the Cessnock Local Government Area. In September 2009, Bloomfield Colliery was granted approval by the NSW Minister for Planning to complete its twelve year mining and rehabilitation program ('The Bloomfield Coal Project'). Prior to approval being granted, open cut and underground mining had occurred at various locations on the site for approximately 175 years.

This Environmental Assessment Report has been prepared to accompany an application by Bloomfield Collieries Pty Limited (Bloomfield) to modify the approval for the Bloomfield Coal Project (07_0087) pursuant to Section 75W of the *Environmental Planning and Assessment Act, 1979* (EP&A Act 1979).

This modification application seeks planning approval for the following development ('Modification Activities'):

- Extension of the approved Project Area by 259 hectares to permit rehabilitation works within Mining Lease CCL 761;
- Upgrade and use of Wattle Tree Drive as an alternative haul route for coal being transported to the washery from the northern pit areas;
- Additional overburden emplacement (1.2 million bank cubic metres) and rehabilitation adjacent to the existing Save-A-Mile haul road;
- Additional 50,000 bank cubic metres overburden emplacement, out-of-pit landform reshaping and rehabilitation in a disturbed northern area;
- Additional 100,000 bank cubic metres overburden emplacement, out-of-pit landform reshaping and rehabilitation in the south-east of the mine site (previous 'K Cut'); and
- Relocation of an existing powerline and associated corridor, to enable the continuation of mining, together with some clearing for an associated infrastructure area.

All of the development proposed above is to be carried out on land owned by Ashtonfields Pty Limited.

This Environmental Assessment describes the Modification Activities in detail and includes a risk assessment to identify key environmental issues. The requirements of the Director-General for Planning as well as consultation with other government authorities and the Bloomfield Community Consultative Committee were included in the consideration of key environmental issues.

Key environmental issues in respect of the Modification Activities are:

- Rehabilitation and final landform;

- Biodiversity;
- Air quality;
- Greenhouse gas emissions;
- Noise;
- Heritage; and
- Visual aspects.

Detailed studies of these key environmental issues identified that there are minimal environmental impacts associated with the proposed Modification Activities. Environmental impacts can be avoided, mitigated, controlled or managed through the implementation of existing Bloomfield environmental management procedures or additional procedures that have been identified for these particular activities.

The Modification Activities will improve rehabilitation and final landform outcomes for the Bloomfield site, improve mine safety by reducing conflict between coal haul trucks and overburden dump trucks and reduce fuel usage in keeping with Bloomfield's Energy Savings Action Plan.

No heritage, water, air quality or visual impacts are predicted, with a visual improvement predicted for the northern haul road area after revegetation of the batters.

Potential short-term and minor noise impacts from south-eastern works will be minimised by only operating during the day with specific equipment, or with specific controls for evening or morning shoulder period operations. The removal of an area of Lower Hunter Spotted Gum Ironbark Forest Endangered Ecological Community (EEC) for the proposed powerline is not considered to impact on the viability of the EEC in the local area.

The proposed modifications to the Bloomfield Approval are required to ensure the continued safe and efficient operation of the Bloomfield Colliery. Alternatives to these modifications were considered, and the selected designs and methods are considered the most efficient and effective. The modifications allowing minor out-of-pit emplacement and landform reshaping will enable previously disturbed areas to be rehabilitated to current industry standards.

Table 1 provides the Director-General's requirements for this environmental assessment and indicates where the requirements are addressed in the report.

Table 1 Summary of Director-General's Requirements in this Report

Item No.	Item required by Director-General	Section addressed in this Report
1	An Executive Summary	Summary
2	A detailed description of: • existing and approved operations and infrastructure on site • existing environmental management and monitoring regime on site	 1.2 3.1
3	A detailed description of the modification including: • the need for the modification • alternatives considered • likely interactions between existing and approved mining operations • likely staging of the modification • plans of any proposed construction works	 8 2.8 2 2 Figures 3,7
4	A risk assessment of the potential environmental impacts of the modification, identifying the key issues for further assessment	5.1
5	A detailed assessment of the key issues, and any other significant issues identified in the risk assessment, which includes: • A description of the existing environment, using sufficient baseline data; • An assessment of the potential impacts of all stages of the modification including any cumulative impacts associated with the concurrent operation of the modification with any other existing or approved mining operations in the region, taking into consideration any relevant policies, guidelines, plans and statutory provisions; and • A description of the measures that would be implemented to avoid, minimise, mitigate and/or offset the potential impacts of the modification, including detailed contingency plans for managing any significant risks to the environment;	 6 6 6, 7.2
6	A statement of commitments, outlining all the proposed environmental management and monitoring measures	7.2
7	A conclusion justifying the modification on economic, social and environmental grounds, taking into consideration whether the modification is consistent with the objects of the EP&A Act 1979	8
8	A signed statement from the author of the Environmental Assessment, certifying that the information contained within the document is neither false nor misleading	After Table of Contents

Key issues:		
10	Rehabilitation and Final Landform – include a justification of the revised final landform; how the site would be progressively rehabilitated; and the measures which would be put in place for the long term protection and management of the site	6.2
11	Biodiversity – including: • Accurate predictions of any vegetation clearing on site • A detailed assessment of the potential impacts of the project on any terrestrial and aquatic threatened species, populations, ecological communities or their habitats; and • A detailed description of the measures that would be implemented to maintain or improve the biodiversity values of the surrounding region in the medium to long term	6.3, App B
12	Air Quality	6.4, App C
13	Noise – including operational and construction noise	6.6, App E
14	Greenhouse Gases	6.5
15	Heritage – both Aboriginal and non-Aboriginal	6.7, App D
16	Visual	6.8
17	References – a list of guidelines, policies and plans was provided that may be of relevance	9
18	Consultation – During the preparation of the EA you should consult with the relevant local, State or Commonwealth government authorities, services providers, community groups or affected landowners. The consultation process and issues raised must be described in the Environmental Assessment, In particular you should consult with: • Department of Environment, Climate Change and Water; • NSW Department of Water (within DECCW); • Department of Industry and Investment; • Cessnock City Council; • Maitland City Council.	4.4

1. Introduction

1.1 Purpose of this Report

This Environmental Assessment Report has been prepared to accompany an application by Bloomfield Collieries Pty Limited (Bloomfield) to modify the Part 3A project approval for the Bloomfield Coal Project (07_0087) (Part 3A Approval) pursuant to section 75W of the *Environmental Planning and Assessment Act, 1979* (EP&A Act 1979).

1.2 Background – Bloomfield Coal Project Approval

Bloomfield Colliery is an open cut mining operation located approximately 20 kilometres north-west of Newcastle, within the Cessnock Local Government Area.

Figure 1 provides the location of the Colliery. Mining has occurred on the Colliery site for approximately 175 years.

Approval for the Bloomfield Colliery was granted by the Minister for Planning on 3 September 2009. The Approval permits the staged completion of mining and progressive rehabilitation of the mine over a 12 year period (until 2021).

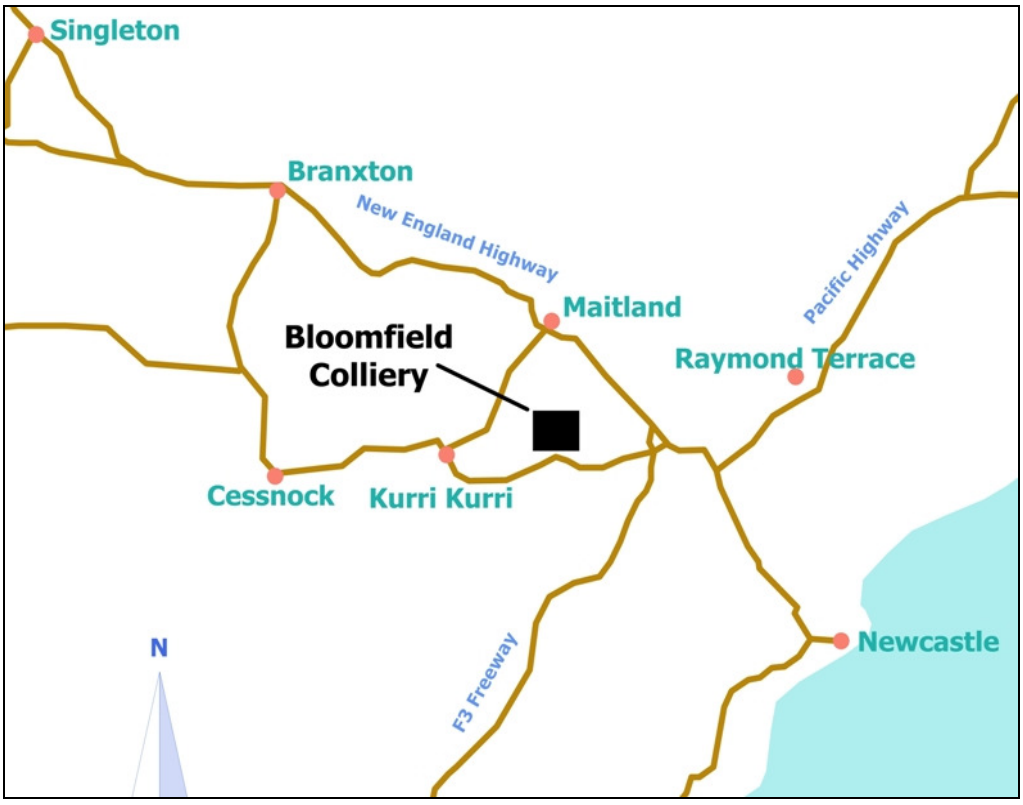


Figure 1 Location of Bloomfield Colliery

The Approval covers an area of approximately 317 hectares, of which 299 hectares (95%) has previously been disturbed by mining-related activities. All land within the approval area is owned by Ashtonfields Pty Limited ('Ashtonfields').

Approved activities include the continued operation of the following mine infrastructure and related activities:

- the current and future open cut mine areas;
- the workshop;
- the road between the open cut pit areas and the run-of-mine (ROM) coal stockpiles at the washery; and
- the road that links the workshop, open cut pits and the washery.

The Approval provides for the extraction of approximately 14 million tonnes of ROM coal at a maximum extraction rate of up to 1.3 million tonnes per annum (mtpa). The approved mine consists of the extension of the existing S Cut and Creek Cut open mine pits by multi-seam truck and excavator or face shovel methods. Mining is undertaken in sequential blocks, with progressive overburden emplacement and coal removal by front end loader for transportation by truck to the ROM coal stockpiles at the washery.

Figure 2 shows the approved mine area and activities, including the Bloomfield Mining Lease boundary (CCL 761 is currently in the process of being renewed), approved Project Area boundary, open cut pits, haul road, access road and workshop, as well as the location of the washery approved by the Donaldson Coal approval (05_0139).

Other mining infrastructure and activities at the Colliery were approved under Project Approval 05_0139 for the Abel Underground Mine. Project Approval 05_0139 was issued to Donaldson Coal and was granted in June 2007. It allows for the Abel Underground Mine as well as the continued use of the Bloomfield washery and rail loading facility, management of water associated with the washery, coarse reject and tailings disposal and coal handling. These items, associated with the operation of the washery, are used to process coal from Bloomfield, Donaldson and other mine sources.

1.3 The Applicant

The Applicant for the Modification Application is Bloomfield Collieries Pty Limited, which forms part of The Bloomfield Group of companies. Bloomfield is an Australian-owned family company.


N
ASHTONFIELD
MT VINCENT WASTE DISPOSAL FACILITY
LOUTH PARK
TAILINGS DISPOSAL AREA
BUCHANAN ROAD
WASHERY
C
A
D
CREEK CUT
B
S CUT
E
JOHN RENSHAW DRIVE
0
500 m
LEGEND
07-0087 Approval Area
Proposed Project Area
A Modified Project Location
FIGURE 2
OVERVIEW OF MINE AREA AND ACTIVITIES
75W MODIFICATION APPLICATION
BLOOMFIELD COLLIERY
MAY 2010

1.4 Overview of Proposed Modifications

It is proposed to extend the approved Project Area to allow for some minor physical alterations and rehabilitation works to the mine. The proposed extension of 259 hectares is in addition to the approved 317 hectare Project Area. The additional area is predominantly land that has been mined and heavily disturbed by historic mining activities. No additional winning of coal is proposed in this extension area.

The other Modification Activities are summarised as follows:

- Upgrade and use of Wattle Tree Drive as an alternative haul route (location marked as 'A' on ***Figure 2***).
- Additional overburden emplacement and rehabilitation - east of Save a Mile Haul Road (location marked as 'B' on ***Figure 2***);
- Additional out-of-pit landform reshaping and rehabilitation – northern and south-eastern areas (locations marked as 'C' and 'E' on ***Figure 2***); and
- Construction of a corridor and overhead powerline from an existing powerline onto the open cut mine site, together with some clearing for an associated infrastructure area (location marked as 'D' on ***Figure 2).***

A detailed description of the Modification Activities, including the extension of the approved Project Area, is provided in ***Section 2***. These modifications are required to improve operational efficiencies and enhance rehabilitation outcomes across the site.

The Modification Activities will not result in any change to the approved volumes of coal or overburden removed, the equipment used, hours of operation, employment numbers or approved life of the mine.

2. Description of the Proposed Modifications

2.1 Introduction

This Chapter describes in detail the Modification Activities to be carried out at the approved Bloomfield Mine. It also describes any likely interactions between approved development and the Modification Activities. The following chapters provide details of any required mitigation measures and any potential environmental impacts or risks associated with each of the described modifications.

2.2 Extension of the Approved Project Area

To carry out the Modification Activities within a mining lease, an extension of the approved Project Area is required.

The existing Project Area under the original Part 3A application (Business Environment, 2008) only includes those areas of the existing Bloomfield Colliery site that are specifically required for active mining and other activities associated with the winning of coal. Rehabilitated areas that were within the existing mining lease and adjacent to the open cut pits are not included.

Section 6 of Schedule 1 of the *Mining Amendment Act 2008* (soon to commence) will make it an offence to *"carry out a mining purpose specified for the purposes of this section except in accordance with an authorisation that is in force in respect of the land where the purpose is carried out."* The mining purposes specified under section 6 include the removal, stockpiling or depositing of overburden.

We note however that under section 65 of the EP&A Act, a mining lease (being the "authorisation" required by Section 6 quoted above) must not be granted unless an appropriate development consent is in force over the land.

As referred to above, the Modification Activities involve extensive overburden emplacement and rehabilitation activities. Accordingly, Bloomfield seeks planning approval for Modification Activities in the proposed extension area to enable it to obtain a mining lease once the relevant amendments to the Mining Act commence.

Bloomfield seeks to extend the boundary of the Project Area to include all areas of previous rehabilitation associated with its S Cut and Creek Cut operations, including those areas requiring improvement works as described in the following sections. Only those activities as described following and associated with the mining operation will be undertaken within this extended area.

Figure 2 shows the proposed modification to the Project Area boundary.

2.3 Development of Wattle Tree Drive as an Alternative Haul Route (Area A)

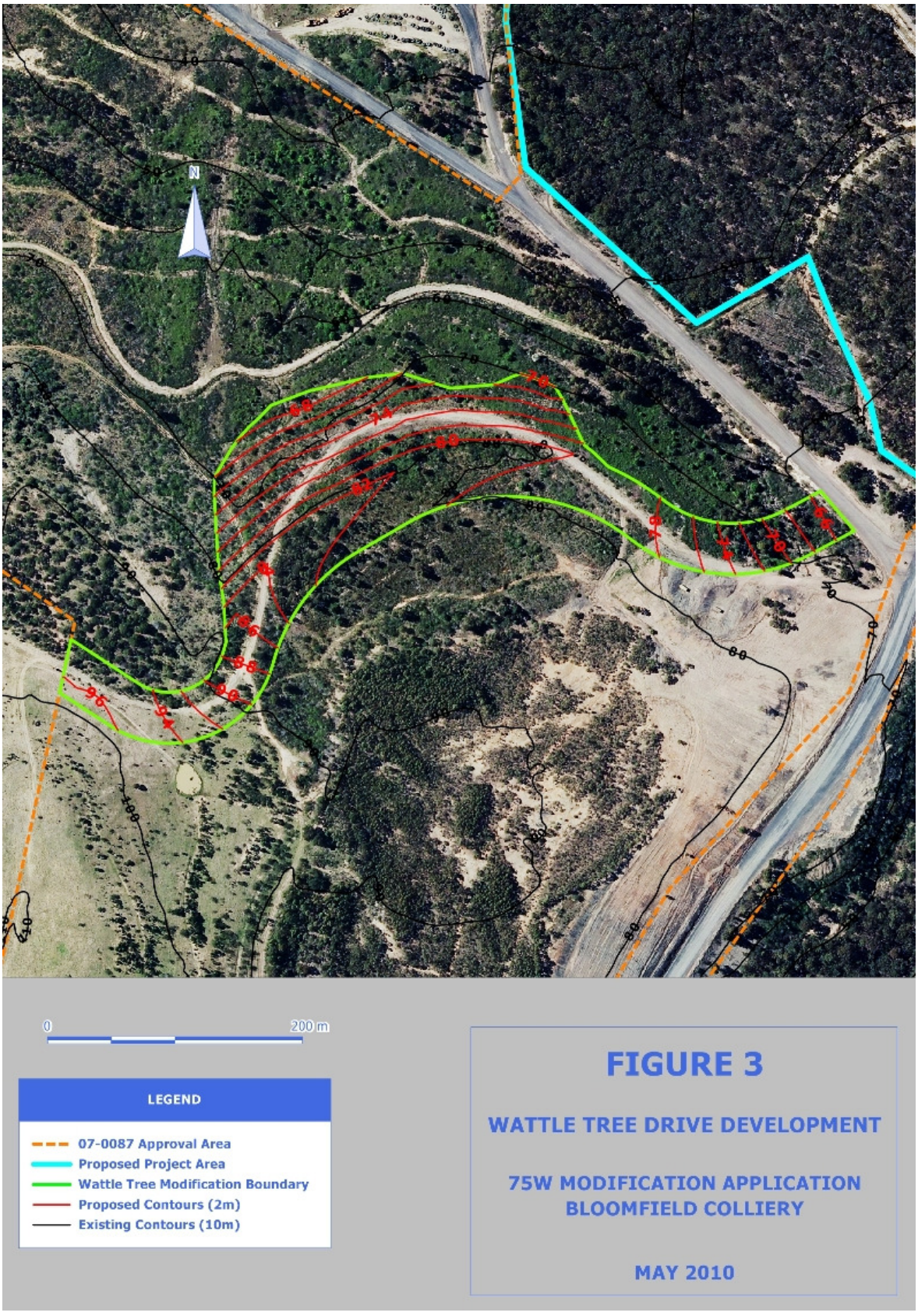
A minor road between the northern open cut pit (Creek Cut) and the north-eastern end of the haul road leading to the washery stockpiles has been in existence for some years. Bloomfield proposes to upgrade this road (called "Wattle Tree Drive" on site) so that it can be utilised as an alternative haul road and provide a safe access between the northern pit and the washery stockpiles. The indicative location of this alternative haul route is shown on ***Figure 3*** and is approximately 750 metres in length.

Use of this alternative route will greatly reduce haulage distances during times when coal is being extracted from the northern areas of S Cut and Creek Cut. The use of this road to haul coal will also improve the level of safety for trucks operating within the open cut area by reducing interaction between coal haul trucks and rear dump trucks working in the cut.

Wattle Tree Drive will be constructed to meet current standards and design requirements for haul roads as specified by the Department of Industry and Infrastructure. Some cut and fill in addition to slope stabilisation work will be required to upgrade the road. The southern and northern batters will be shaped and stabilised as part of the construction works and revegetated. Construction is expected to take approximately six to twelve weeks.

Photograph 1 shows the view looking upwards towards the current route, showing the northern batter of the road that will be reshaped and revegetated.

Photograph 1
View southwards towards Wattle Tree Drive (open grassed area).


N
0
200 m
LEGEND
07-0087 Approval Area
Proposed Project Area
Wattle Tree Modification Boundary
Proposed Contours (2m)
Existing Contours (10m)
FIGURE 3
WATTLE TREE DRIVE DEVELOPMENT
75W MODIFICATION APPLICATION
BLOOMFIELD COLLIERY
MAY 2010

2.4 Additional Overburden Emplacement and Rehabilitation - East of Save-a-Mile Highway (Area B)

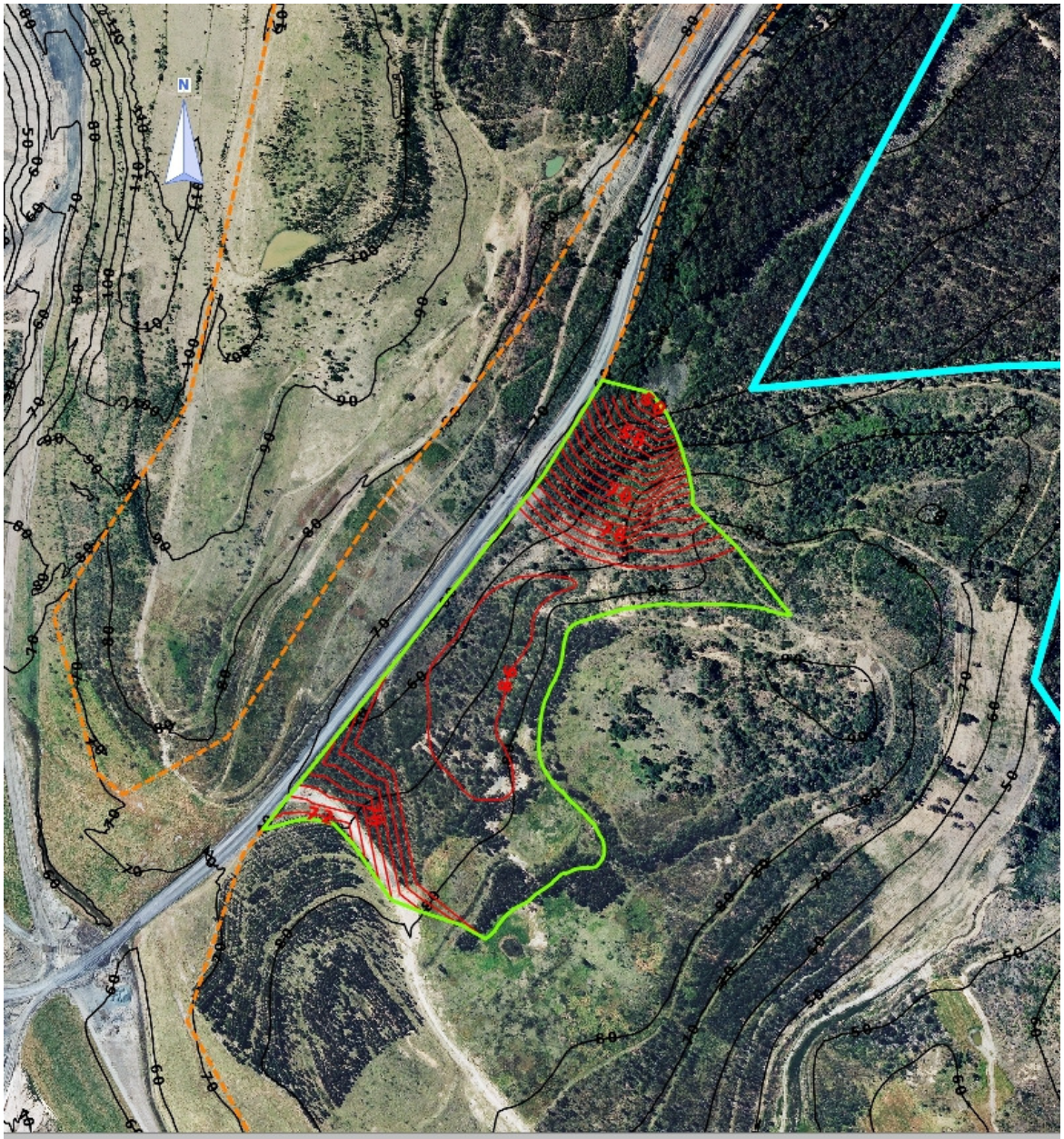
An out-of-pit area to the east of the approved haul road (called "Save-a-Mile Highway" on site) has been identified as an area that is capable of receiving an amount of overburden to assist with out-of-pit overburden management, as well as improving the overall site final landform shaping and revegetation. The area has been rehabilitated in the past but is considered not to be to current rehabilitation standards.

The area is approximately 14.2 hectares in size and shown on ***Photograph 2***. To maximise operational efficiencies and improve final land shaping and vegetation cover in this area, Bloomfield proposes to place approximately 1.2 million bank cubic metres (bcm's) of overburden on this area prior to reshaping and revegetation to current rehabilitation standards. Works would occur over approximately twelve months during the early stages of the approved "Stage 2" of mining.

This out-of-pit emplacement and rehabilitation would not alter the approved mine plan or tonnages as this site would replace the previous emplacement location approximately 850 metres south-west at similar RL's.

Equipment proposed for these works would be that used for the currently approved operation as described by Section 2.6.2 of the EA (Business Environment, 2008), with no additional equipment to be introduced for these works. Rear dump haul trucks would transport overburden material to the area with dozers pushing and shaping material prior to topsoil application and seeding. No preliminary construction works would be required, however, erosion and sediment controls will be installed to the north-east as work progresses to protect water quality in this area.

Photograph 2
Proposed emplacement area east of Save-A-Mile haul road – showing existing rehabilitation.



0 200 m

LEGEND

- 07-0087 Approval Area
- Proposed Project Area
- Earthworks Modification Boundary
- Proposed Contours (2m)
- Existing Contours (10m)

FIGURE 4

ADDITIONAL OVERBURDEN EMPLACEMENT & REHABILITATION - EAST OF SAVE A MILE HAUL ROAD

75W MODIFICATION APPLICATION BLOOMFIELD COLLIERY

MAY 2010

2.5 Out-of-Pit Landform Reshaping and Rehabilitation - Northern and South-Eastern Areas (Areas C and E)

Two out-of-pit areas of approximately 10 hectares and 7 hectares respectively, are located to the north and south-east of the current mine pits. ***Photograph 3*** and ***Photograph 4*** show the general nature of these two areas. Their indicative locations are shown on ***Figure 5*** and ***Figure 6***.

These locations are former mining areas consisting of overburden material with some minor shaping and grass seeding. There is minimal native vegetation and the native vegetation that does exist has grown from adjacent tree seeding. To improve the landform shape, drainage and rehabilitation of these areas and revegetate to current standards, minor import of overburden and subsequent revegetation is proposed. The amount of overburden material that would be transported to these areas would be approximately 50,000 and 100,000 bcm's respectively. Works would be undertaken over approximately 6 months.

Equipment to be used will be as described in ***Section 2.4.*** No particular construction works are proposed prior to the shaping of these areas, and the interaction of works within these areas with existing operations will be minimal and short-term. Overburden material will be trucked to the northern location from the pits using the haul road system, which is adjacent to the area. Trucks will transport material to the south-eastern area (referred to historically on site as "K Cut") using an existing track accessed off Save-A-Mile Haul Road.

Photograph 3
View towards proposed northern emplacement area.

Photograph 4
Proposed south-east landform reshaping area.

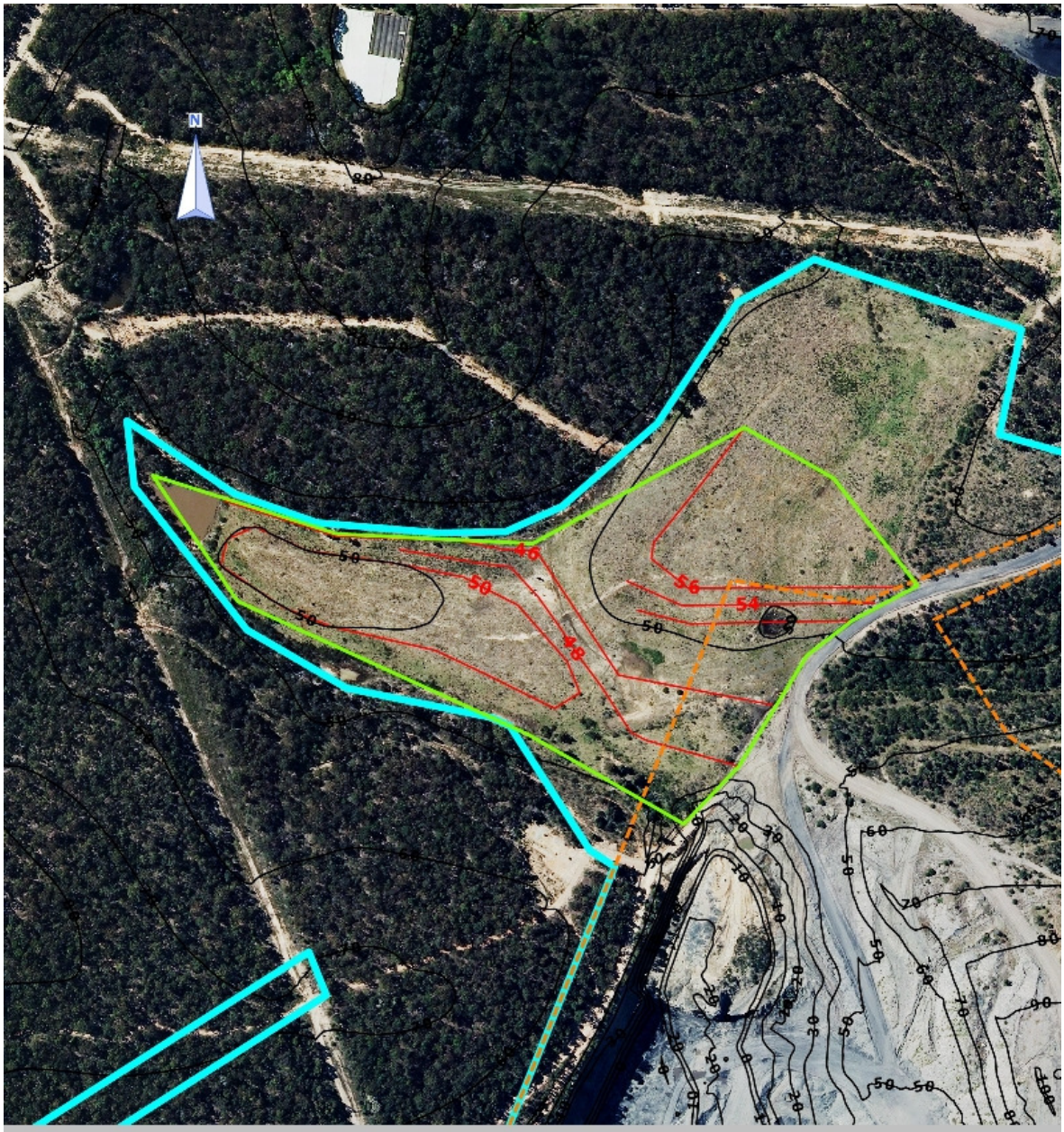


FIGURE 5

OUT-OF-PIT LANDFORM RESHAPING AND REHABILITATION - NORTHERN AREA

75W MODIFICATION APPLICATION BLOOMFIELD COLLIERY

MAY 2010

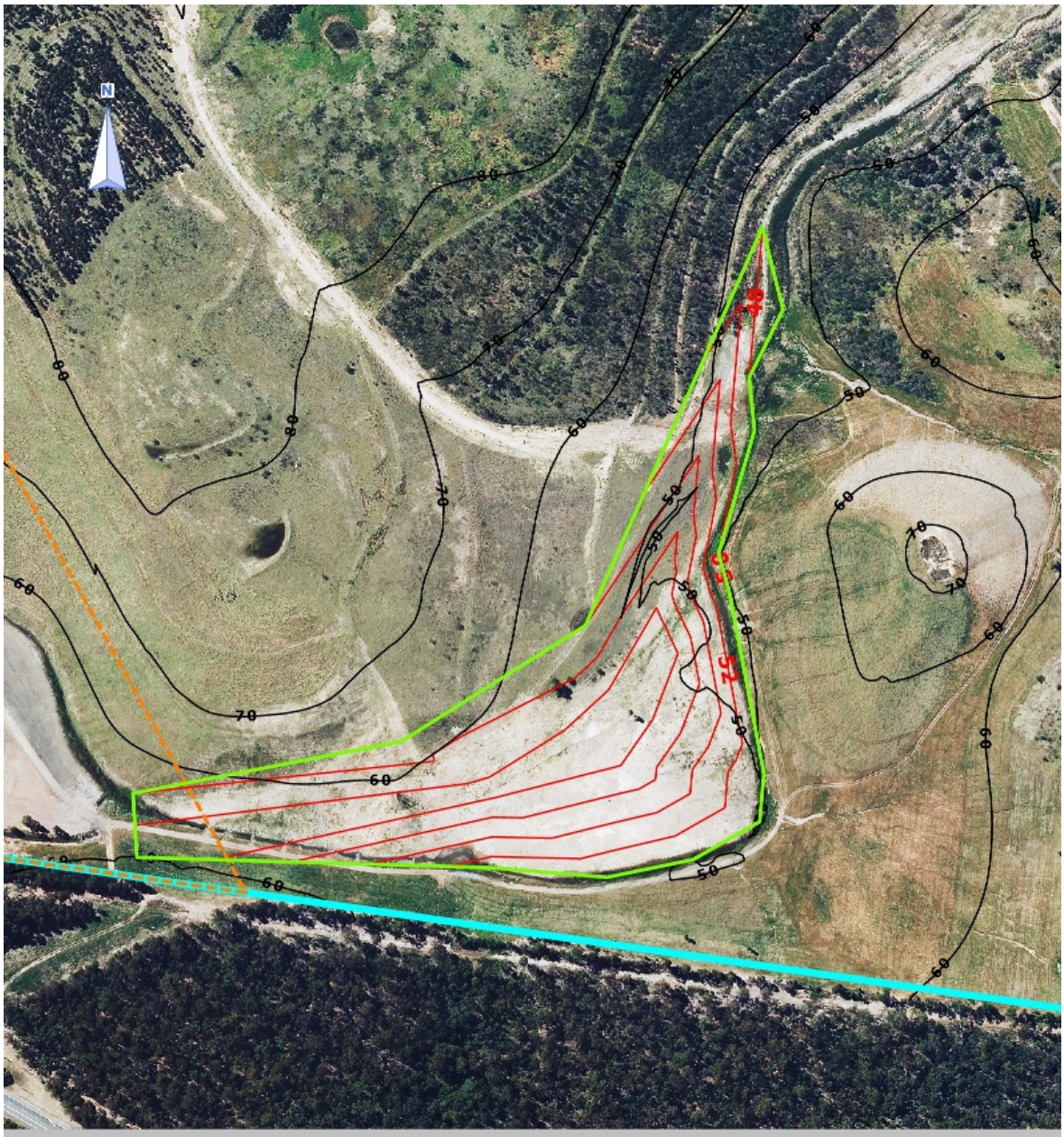


FIGURE 6

OUT-OF-PIT LANDFORM RESHAPING AND REHABILITATION - SOUTH-EASTERN AREA

75W MODIFICATION APPLICATION BLOOMFIELD COLLIERY

MAY 2010

2.6 Construction of an Overhead Powerline and Corridor (Area D)

An existing overhead powerline and associated corridor is located to the north-west of the Bloomfield Project Area. This line, shown on ***Figure 7***, extends from a previous open cut mine area in the north of the Bloomfield Colliery site into the current Creek Cut area. The powerline currently provides power for the water cart filling station, water pumps and shovel.

To enable the approved expansion of Creek Cut and S Cut to proceed, the southern section of this powerline, within the current Project Area, needs to be relocated. It is also proposed to remove some vegetation within the existing Project Area to enable the infrastructure required to connect the power supply to site equipment, namely transformers, earth leakage grids and cables.

It is proposed to relocate a 330 metre section of the powerline and clear an area inside the existing Project Area, as shown on ***Figure 7***. This would require construction of a 40 metre wide corridor, removing approximately one hectare of native vegetation outside the existing Project Area as well as approximately ten hectares of native vegetation clearing within the existing approved Project Area. The ten hectares inside the existing Project Area includes approximately seven hectares of Lower Hunter Spotted Gum-Ironbark Forest Endangered Ecological Community (LHSGIF EEC). The general nature of the area where the clearing is proposed is shown on ***Photograph 5***.

Construction would consist of marking of the corridor and area to be cleared, vegetation clearing, installation of posts and lines, connection to the existing line and relocation of transformers, earth grids and other associated infrastructure. The existing line and posts would then be removed.

The works would be undertaken within six months of the modification being approved and construction works would be less than six weeks in duration.

Photograph 5 The proposed powerline corridor within the Lower Hunter Spotted Gum-Ironbark Forest

0 200 m

LEGEND

- 07-0087 Approval Area
- Project Modification Boundary
- Archeology Study Area
- Existing Powerline
- Proposed Powerline
- Area to be Cleared for Powerline Infrastructure

FIGURE 7

POWERLINE AND CORRIDOR LOCATION

75W MODIFICATION APPLICATION BLOOMFIELD COLLIERY

SEPTEMBER 2010

2.7 Land Description for the Proposed Modification Activities

All proposed Modification Activities are on land within the Bloomfield Colliery, operated by Bloomfield Collieries Pty Limited and owned by Ashtonfields Pty Limited. The local government area is Cessnock. Lot and DP details for the land that is within the modified Project Area described by this Application are provided on ***Figure 8***.

2.8 Alternatives to the Proposed Modification Activities

As described in the previous section, the extension of the approved Project Area is required under the provisions of the soon to commence *Mining Amendment Act 2008.* The removal, stockpiling or depositing of overburden in the relevant areas requires an authorisation under the Mining Act for which a planning approval is a condition precedent. There is therefore no alternative than to seek this modification of the current Approval. Without planning approval, the out-of-pit emplacement, landform shaping, rehabilitation and alternative haul road activities cannot occur.

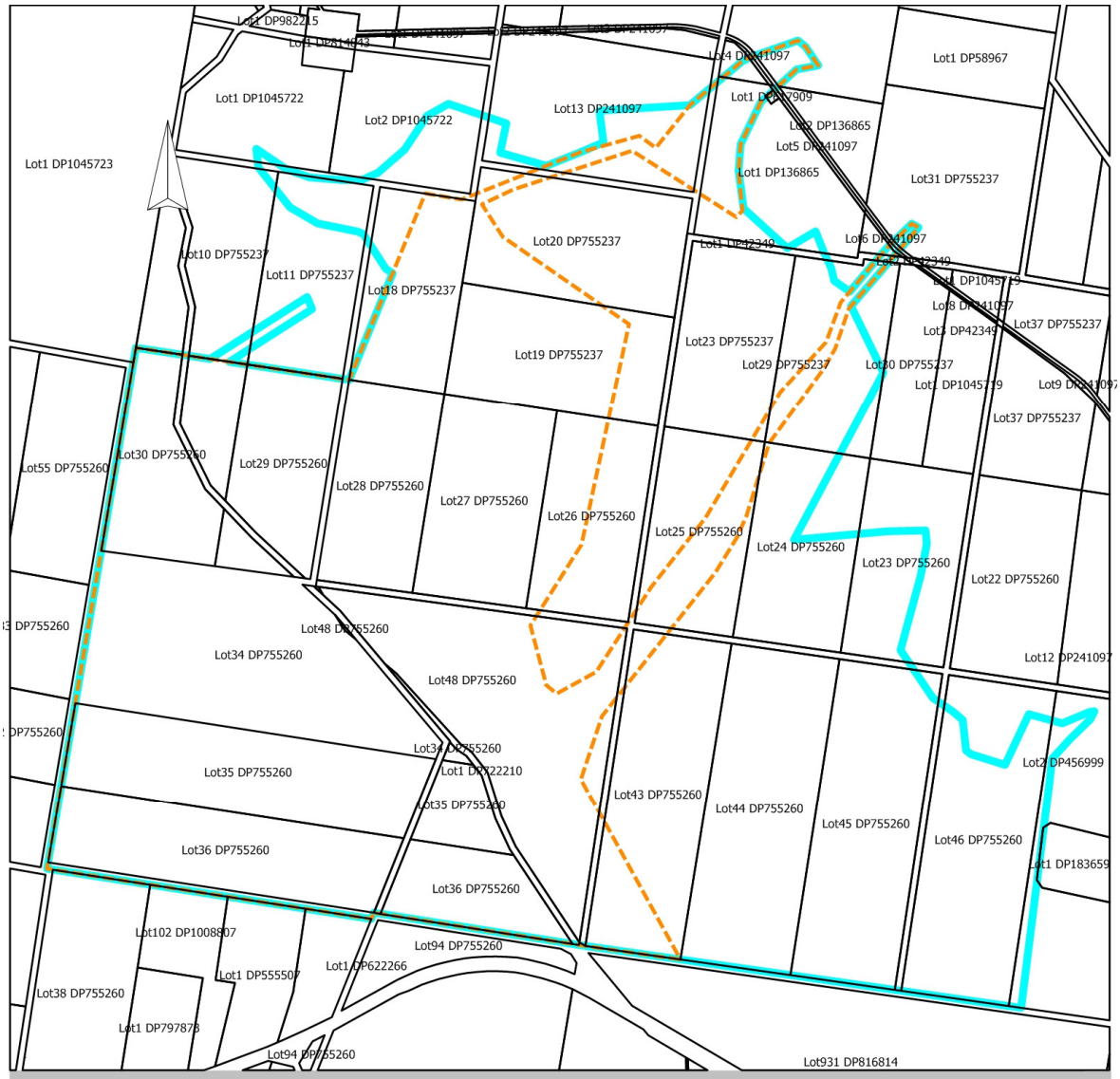
The area east of Save-A-Mile Highway was selected to receive additional overburden material after a detailed review of other potential out-of-pit areas, which are limited. Areas west of the existing pits have undisturbed vegetation, to the north the areas are either part of the tailings emplacement or are elevated and visible from outside the site, and to the east areas are either vegetated, part of the water management system or have previous rehabilitation that is considered to be successful and to current standards. The area selected is considered the most capable of receiving material due to its lower elevation, screening from outside the site, proximity to the existing haul road and current poor rehabilitation that requires improvement. If this area is not approved for overburden emplacement, the open operational area within the current pits will become smaller and difficult to operate, and some overburden material will require double-handling, which should be avoided so as to reduce impacts such as noise, dust and fuel use.

The two areas selected for landform shaping and rehabilitation currently have poor quality pastures and experience drainage problems during wet periods. Minor overburden emplacement on these areas to slightly elevate the landform, with landform shaping and revegetation, will enable these areas to meet current rehabilitation standards and contribute more effectively to the final landform and land use.

The upgrade and use of the proposed Wattle Tree Drive as an alternative haul route will greatly reduce haulage distances during times when coal is being extracted from the northern areas of S Cut. This will reduce fuel usage as haul trucks will have a

reduced haulage distance to the washery. The use of Wattle Tree Drive to haul coal will also improve the level of safety for trucks operating within the open cut area by reducing interaction between coal haul trucks and rear dump trucks working in the cut. The alternative to developing Wattle Tree Drive is to retain all haulage along the existing Save A Mine haul road, which will increase haulage distances and decrease safety as overburden and coal haul trucks interact more closely with each other within the cut. Wattle Tree Drive is an existing track and therefore only requires some shaping and widening prior to use. There are no other disturbed tracks or areas between the northern pit area and the washery that are capable of being developed with minimal disturbance.

The modified powerline corridor location is required to enable Creek Cut works to be completed. The current powerline corridor is within the path of the approved works and cannot be retained if coal is to be won in this area in accordance with the Bloomfield Approval. The proposed corridor location and its associated powerline infrastructure area was selected for minimal distance and impact on vegetation. As can be seen on ***Figure 7***, the proposed clearing area has some areas of clearing already, reducing the need for further vegetation clearance, and the proposed powerline corridor is the shortest route that enables the powerline to remain out of the way of the mine path.



CADASTRAL INFORMATION

LOT	DP	LOT	DP
36	755260	35	755260
34	755260	1	722210
29	755260	30	755260
28	755260	27	755260
pt of 48	755260	pt of 43	755260
pt of 25	755260	pt of 24	755260
pt of 23	755237	pt of 29	755237
pt of 25	755237	pt of 4	241097
pt of 5	241097	pt of 1	136865
pt of 13	241097	pt of 20	755237
pt of 19	755237	pt of 18	755237
1	42349	2	42349
3	42349	pt of 10	755237
pt of 11	755237	pt of 1,2	1045722
pt of 23	755260	44	755260
pt of 31	755237	pt of 45	755260
pt of 46	755260	pt of 2	456999

0 500 m

LEGEND

- Proposed Project Area Boundary
- Cadastral Boundary
- 07-0087 Approval Area

FIGURE 8

BLOOMFIELD MINE SITE CADASTRAL PLAN

75W MODIFICATION PLAN BLOOMFIELD COLLIERY

MAY 2010

3. Environmental Management Strategy & Plans

3.1 Existing Environmental Management Strategy & Plans

An Environmental Management Strategy (EMS) has been prepared in accordance with the requirements of the Approval and lodged with Department of Planning. The purpose and objectives of the EMS are to:

- Provide an overall framework for environmental management;
- Identify key environmental aspects to be addressed in the strategy and supporting plans and procedures;
- Establish procedures for reviewing progress and implementing corrective actions; and
- Provide a framework for review and continual improvement.

Environmental Management Plans (EMP's) and monitoring strategies that are included within the EMS framework that guide on-site operations include:

- Site Water Management Plan;
- Noise Monitoring Plan;
- Blast Monitoring Plan;
- Air Quality Monitoring Plan;
- Landscape Management Plan (which includes rehabilitation, final void and mine closure plans);
- Aboriginal Cultural Heritage Management Plan; and
- Energy Savings Action Plan.

Existing plans and procedures that have guided Bloomfield mine operations in the past have been amended to meet the requirements of the Approval granted in 2009. The plans have been submitted to the NSW Department of Planning for endorsement by the Director General. The plans outline a monitoring regime which includes a network of noise, dust, blast and surface/ground water monitoring sites.

3.2 Modifications to Existing Environmental Management Strategy & Plans

The EMS and EMPs described above are to be amended where required to include the Modification Activities. This will generally only require the alteration of the Project Area boundary on included plans. This will be undertaken during the next scheduled review of the documents.

No existing monitoring sites are located within or adjacent to Modification Activity areas and therefore no sites will require relocation. The assessment of impact for the Modification Activities (***Section 6***) does not identify any additional monitoring locations to be provided. Each of the examined key issues determined that no changes would be required to the various management plans and procedures in

order to include additional procedures. Existing procedures within the management plans will be followed to minimise any potential impact from modification activities.

There are no changes proposed to the approved monitoring or reporting regime as part of the Modification Activities, or to the operation of the site water management system. Accordingly, the Site Water Management Plan and Noise, Blast and Air Quality Monitoring Plans will not require any amendment to their operational content. The Modification Activities do not require any change to the current Aboriginal Cultural Heritage Management Plan or Energy Savings Action Plan.

The Landscape Management Plan, which includes a Rehabilitation Management Plan, will not require any change to its rehabilitation objectives, performance and completion criteria or general procedures. Rehabilitation plans for the proposed additional areas described in this document will be added to the relevant plans for Rehabilitation Management.

The Void Management Plan and Mine Closure Plan will reflect the proposed improvements to the previously rehabilitated areas.

4. Regulatory Framework & Consultation

4.1 The Bloomfield Mine Approval

The Minister for Planning granted approval for the Bloomfield Colliery (07_0087) on 3 September 2009, under Part 3A of the EP&A Act. The Approval permits the staged completion of mining and rehabilitation at Bloomfield Colliery over a 12 year period (until 2021).

The Approval covers an area of approximately 317 hectares, of which 299 (95%) is presently disturbed by mining-related activities. All land within the approval area is owned by Ashtonfields Pty Limited.

Approved activities include the continued operation of the following mine infrastructure and related activities:

- the current and future open cut mine areas;
- the workshop;
- the road between the open cut pit areas and the ROM coal stockpile at the washery; and
- the road that links the workshop, open cut pits and washery.

The complete EA that was prepared for the Bloomfield Mine (Business Environment, 2008) is provided on the Bloomfield Colliery website.

4.2 Proposed Modification Process

Section 75W of the EP&A Act provides for the modification of the Minister's approval for a major (Part 3A) project. The section states that:

- *75W (2) "The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
- *75W (3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
- *75W (4) The Minister may modify the approval (with or without conditions) or disapprove of the modification."*

Bloomfield requested a modification to the Minister's approval and received the Department of Planning's Director-General's Requirements for the modification by letter dated 14/12/2009 (***Appendix A***).

The investigations and studies required to be undertaken by the Director-General have been completed and are included in this document. ***Table 1*** in the Summary provides a list of the Director-General's requirements and where they are addressed.

4.3 Other Relevant Instruments, Policies, Permits & Licences

The proposed modifications to the Bloomfield Mine all lie within the Cessnock Local Government Area on land zoned 1(a) Rural A under the *Cessnock Local Environmental Plan 1989*. Mining and associated surface activities are permitted with consent in this zone and the activities are compatible with the objectives of this zone.

Bloomfield currently holds Environment Protection Licence 000396 under the *Protection of the Environment Operations Act 1997*. The requirements under this Licence, and the relevant activities contributing to the licence, will not be affected by the proposed modifications.

The modification will not require any changes to the *Notification of Dangerous Goods on Premises* required by Work Cover NSW.

Licences under Part 5 of the *Water Act 1912* and the *Water Management Act 2000* are also not affected or required to be altered by the proposed modifications.

Following the approval of the modification application, a mining lease under the *Mining Act 1992* will be sought. This matter has been discussed and agreed with the Department of Industry and Infrastructure (refer ***Section 4.4***).

No changes that are considered relevant to the proposed modifications have occurred to Commonwealth legislation, State Environmental Planning Policies or regional planning strategies since preparation of the EA. The *Lower Hunter Regional Strategy,* examined by the Bloomfield EA, was re-endorsed by the NSW Government in February 2010 (NSW Government Press Release, 18 February 2010).

The revised *Lower Hunter Regional Conservation Plan* was published December 2009 by DECCW with minor amendments from the draft Plan that was considered in the Bloomfield EA. None of the amendments to the Plan are considered relevant to the proposed modifications.

Policies and guidelines that have been used in the preparation of this modification report are listed in the relevant Appendices and sections.

No new instruments, policies, permits, licences or guidelines are required due to the proposed modification activities.

4.4 Consultation

A summary of consultation undertaken to discuss the proposed modifications is provided in ***Table 2***.

Table 2 Consultation undertaken for the Modification Activities

Authority/Group	Type of Consultation/Date	Issues Discussed/Comments
Department of Environment, Climate Change and Water	Telephone call 24/05/10	Called Fergus Hancock to advise that Bloomfield is planning to submit an application under 75W to modify the Project Approval. No significant changes to water management system required.
Department of Industry and Investment	Meeting held 10/08/09	Meeting with David Agnew to discuss the modifications and mine lease.
Cessnock City Council	Telephone call 04/05/10	Discussion with Rod Sandell regarding the modification. Outlined the proposed modification and need to modify the approval. Advised that key issues such as noise will be assessed.
Maitland City Council	Email 17/05/10 and telephone call 24/05/10	Called Leanne Harris to advise that Bloomfield is planning to submit an application under 75W to modify the Project Approval. All modifications are minor and within the Cessnock LGA. Advised that key issues such as noise will be assessed.
Community Consultative Committee	CCC meeting held 3/5/10	The matter was raised by Bloomfield during general business of the first CCC meeting. A brief overview of the proposed modifications was provided and an explanation about the need for the changes. General discussion about rehabilitation standards followed.

5. Risk Assessment and Key Issues

5.1 Environmental Risk Identification

Table 3 following has been prepared to assist in the identification of potential environmental risks associated with the proposed Modification Activities and identify which key issues require further investigation.

This table includes those types of activity aspects that were identified by the more comprehensive risk assessment undertaken for the Bloomfield Mine Project Environmental Assessment, and includes the risk categories that were developed for similar activities (GSSE Appendix C in Business Environment, 2008).

The key aspects included in the Bloomfield EA Risk register were typical of an open cut mine, being:

- Disturbance of Aboriginal heritage;
- Disturbance of European heritage;
- Erosion and sedimentation;
- Fire hazard;
- Dust;
- Noise and vibration;
- Light disturbance;
- Contamination of surface and ground water resources;
- Storage and management of hydrocarbons including spills and leaks;
- Injury to or loss of threatened flora and fauna and/or habitat; and
- Introduction of weeds.

As the proposed Modification Activities are directly related to the approved Bloomfield mining operation, the above aspects are considered to remain relevant.

The probability/consequence overview is based on the summarised risk classification system used in the Bloomfield EA, being as follows:

- **H** (high risk) – requires immediate management attention, a stop/stand down until rectified if deemed necessary.
- **M** (moderate risk) – acceptable with current controls but requires attention if controls are absent or ineffective, and where practicable develop other controls to mitigate the risk.
- **L** (low risk) – acceptable risks are assessed and controlled as required.

Table 3 Environmental Risk Assessment Overview

Activity	Aspect (Potential Impact)[1]	Existing or Proposed Controls	Probability/ Consequence Overview (L, M, H)
Extension of the approved Project Area			
Documentation change only – nil physical activities	Nil	Nil	N/A
Development of Wattle Tree Drive as alternative haul route			
Construction & operation of the haul route	Noise from construction and haulage	Existing Noise Monitoring Plan and set noise limits, hours of operation	**M** – model levels to determine
	Dust from construction and haulage	Existing Air Quality Management Plan (AQMP), procedure controls dust, use of water cart	**M** – model levels to determine
	Hydrocarbon spillage during construction/haulage	Existing emergency spill response actions	**L** – disturbed area, within mine catchment
	Loss of threatened flora/fauna/habitat due to construction	Nil mature vegetation on route, pre-clearance survey for batter disturbance, flora and fauna management plan, plant operator training, seasonal clearing if required, include in offset management strategy if LHSGIF EEC	**M** – undertake survey to investigate further.
	Disturbance of Aboriginal heritage due to construction	Existing Aboriginal Cultural Heritage Management Plan (ACHMP) controls actions, staff training	**L** – previously disturbed area
	Disturbance of European heritage due to construction	Nil located during EA	**L** – none on site known from EA
	Erosion and dirty water runoff - change to on site water balance requiring off site discharge or dirty water overflow to clean water system	Existing ESCP/Water management plan controls actions, staff training	**L** – within Bloomfield mine catchment

Activity	Aspect (Potential Impact)[1]	Existing or Proposed Controls	Probability/ Consequence Overview (L, M, H)
	Lighting affecting residential areas during construction and operation	Construction during daylight hours, haulage at night – design to consider headlight directions	**M** – visual study required from Ashtonfield
	Greenhouse gas emissions – construction and operation	Equipment used serviced to standards, efficient use of plant and equipment	**L** – route reduces haulage to reduce GHGs
	Visual impact on outside areas	Planting of trees on northern side, staged rehabilitation of batters/banks	**M** – visual study required from Ashtonfield
South-east area – additional overburden emplacement and rehabilitation ***Northern and south-eastern areas – out-of-pit landform shaping and rehabilitation***			
Clearing of vegetation	Minimal clearing required, regrowth only or grassland	Existing erosion, weed control procedures	**L** – no mature vegetation
Transport of overburden to emplacement area and dumping	Noise from transport movements and dumping	Existing Noise Monitoring Plan and set noise limits, hours of operation	**M -** known to be near set limits for EA - model levels to determine
	Dust from transport movements and dumping	Existing Air Quality Management Plan (AQMP), procedure controls dust, use of water cart	**M** – model levels to determine
	Hydrocarbon spillage	Existing emergency spill response actions	**L** – disturbed area, within mine catchment
	Loss of threatened flora/fauna/habitat	No mature vegetation on site – nil to be cleared	**L** – previously disturbed areas
	Disturbance of Aboriginal heritage	Existing Aboriginal Cultural Heritage Management Plan (ACHMP) controls actions, staff training	**L** – previously disturbed area
	Disturbance of European heritage	Nil located during EA	**L** – none on site known from EA
	Erosion and dirty water runoff	Existing ESCP/Water management plan controls actions, staff training	**L** – within Bloomfield mine catchment
	Lighting of dumps affecting residential areas	Provision of directional lighting – shield from residences if required, no night operations	**L** – minimal as no night operations

Activity	Aspect (Potential Impact)[1]	Existing or Proposed Controls	Probability/ Consequence Overview (L, M, H)
	Greenhouse gas emissions	Equipment used serviced to standards, efficient use of plant and equipment	**L** – minimal time and operation
	Visual impact on outside areas of roads/dump sites	Consideration of dump design/rehabilitation and revegetation	**L** – minor change – undertake visual study to determine degree
	Change to on site water balance requiring off site discharge or dirty water overflow to clean water system	Existing ESCP/Water management plan controls actions, staff training	**L** – within Bloomfield catchment
Rehabilitation/revegetation	Biosolid odour/runoff	Existing management procedure for application	**L** – minimal application and area – not current issue
	Lime and/or gypsum dust	Control moisture levels at time of application	**L** – minimal application and area
	Potential to introduce weeds	Existing control procedure – purchase of certified seed/tubestock, weed control contractors	**L** – minimal area, existing controls in place
	Failure of seed/tubestock to germinate/establish	Purchase of certified seed/plants, staff training, existing rehabilitation maintenance procedure	**L** – good recent history of growth
	Bushfire hazard in revegetated areas	Existing bushfire management plan, existing site hazard reduction planning	**L** – minimal area, procedures in place
	Spon. com. in rehabilitated areas	Burial of oxidised coal material via rehabilitation management plan, existing emergency response plan procedures	**L** - material unlikely to spon com.
Construction & Operation of Overhead Powerline and Corridor			
Clearing of vegetation and maintenance of corridor	Removal of threatened flora/fauna/habitat (LHSGIF EEC)	Pre-clearance survey, flora and fauna management plan, plant operator training, seasonal clearing if required, include in offset management strategy if LHSGIF EEC	**M** – known LHSGIF EEC – completed survey
	Loss of top dressing material	Existing procedure to strip and reuse on areas being rehabilitated, staff training	**L** – minimal material

Activity	Aspect (Potential Impact)[1]	Existing or Proposed Controls	Probability/ Consequence Overview (L, M, H)
	Disturbance of Aboriginal heritage	Existing Aboriginal Cultural Heritage Management Plan (ACHMP) controls actions, staff training	**M** – complete survey
	Disturbance of European heritage	Nil located during EA	**L** – none located on site
	Erosion and dirty water runoff	Existing ESCP/Water management plan controls actions, staff training	**L** – all within site catchment
	Dust emissions	Existing Air Quality Management Plan (AQMP), procedure controls dust, use of water cart	**M** – model levels to determine
	Potential for hydrocarbon spill	Existing emergency spill response actions	**L** – minimal area
	Potential to introduce weeds	Use of weed control contractors, vehicle check before entering site	**L** – minimal area
	Noise disturbance	Existing Noise Monitoring Plan and set noise limits, hours of operation	**M** – model levels to determine
	Greenhouse gas emissions	Equipment used serviced to standards, efficient use of plant and equipment	**L** – minimal area/activity
Construction and operation of overhead powerline	Dust emissions to residential areas during construction	Existing Air Quality Management Plan (AQMP), procedure controls dust, use of water cart	**L** – minimal dust generating activities
	Potential for hydrocarbon spill during construction	Existing emergency spill response actions	**L** – minimal risk activities
	Noise disturbance to residential areas during construction	Existing Noise Monitoring Plan and set noise limits, hours of operation	**M** – model levels to determine
	Greenhouse gas emissions	Equipment used serviced to standards, efficient use of plant and equipment	**L** – minimal area/activity

Notes:

[1]. Selected from those aspects identified in the Bloomfield Colliery Environmental Risk Register (Appendix C, GSSE in Business Environment 2008)

5.2 Key Issues

Table 3 shows that the majority of Modification Activities and their aspects have a low environmental risk rating. Those with a medium risk rating, that require further investigation to determine their scope, degree of potential impact and whether additional controls may be required, are:

- Potential for dust emissions from the Modification Activities;
- Potential for noise disturbance from the Modification Activities;
- Potential for visual disturbance from Ashtonfield from the development of Wattle Tree Drive, requiring a visual study from this location to be undertaken;
- Potential for the loss of some Lower Hunter Spotted Gum Ironbark Forest Ecologically Endangered Community for the construction of the powerline corridor and associated infrastructure; and
- Potential for disturbance of Aboriginal heritage during clearing for the powerline corridor.

These items are examined in detail in the following chapter.

6. Review of Key Environmental Issues

6.1 Introduction

This Chapter investigates in detail each of the key environmental issues identified from the Environmental Risk Assessment and those identified by the Director-General's Requirements issued for the modification application. The Modification Activities are based on the descriptions provided in ***Chapter 2***. Detailed studies undertaken by specialist consultants are provided as Appendices.

Each key issue describes the existing environment, any potential impact from the proposed Modification Activities and any required controls to mitigate or manage any predicted impact. Cumulative impact with existing operations and with nearby mine activities is considered where relevant, for example, for noise and air quality.

6.2 Rehabilitation and Final Landform

6.2.1 Existing Rehabilitation and Final Landform Strategies

A *Rehabilitation and Landscape Management Strategy* was provided in the Bloomfield EA (Business Environment, 2008). This provided information on the Bloomfield rehabilitation management system, rehabilitation aims, objectives and procedures, as well as information on the final void, post-mining landform and land use and integration of rehabilitation with other projects.

After the Approval was granted, a Landscape Management Plan, including a Rehabilitation Management Plan (Bloomfield Collieries 2/3/10 final draft), was prepared and lodged with the Department of Planning as required by the environmental conditions of the Approval.

This section considers any change to the above strategy and plans that may be required to accommodate the proposed modifications, and any environmental risks and/or required controls. It also describes the proposed rehabilitation and final landform for the proposed modification areas.

Final landform and revegetation plans for the whole Bloomfield Mine area will be influenced in the future by the requirements of various other projects, which are not owned or operated by Bloomfield. These projects include the use of the final void for rejects disposal from the washery operations, as provided for by the adjacent Abel Mine Project Approval and the final outcomes of the Lower Hunter Regional Strategy (Department of Planning, 2006) that provides for a range of future land use options for the mine site. These final land use decisions will be in consultation

with Ashtonfields Pty Limited, the owners of the land on which the Bloomfield Mine is located.

Notwithstanding the future unknown influences on site development and final landform, in order to meet regulatory requirements and land owner expectations, an agreement has been established with the landowner that sets out general obligations for post-mining rehabilitation, such as the requirement to provide a safe and stable landform, remove site infrastructure and rehabilitate overburden dumps, roads, final voids, dams and tailings emplacements.

In general, the overall aim of the rehabilitation plan for the Bloomfield mine site is to provide a safe and stable landform that is compatible with the surrounding landscape and that can allow for a range of potential future land uses. Overburden dumps will be reshaped with a maximum slope of 18 degrees. Where steep slopes are constructed, suitable erosion and sediment controls banks will be incorporated to provide for stability. Detailed rehabilitation objectives and procedures are provided in the Bloomfield Rehabilitation Management Plan.

6.2.2 Proposed Modifications to the Rehabilitation and Final Landform Strategies

Extension of the approved project area for the purpose of the Modification Activities has no impact on rehabilitation and final landform. The purpose of the extension is to ensure active mine areas are included within the Project Area.

Figure 3 shows the landform contours required for the development of Wattle Tree Drive as an alternative haul route. The plan shows that the road is an existing access track, and that the upslope and downslope batters will be reshaped to widen Wattle Tree Road, enabling its use as a haul road. The road is at a higher elevation in the northern section of the mine site and these batters will be revegetated with a range of tree and shrub species to reduce any visual impact and stabilise the slopes.

Tree, shrub and pasture species that will be used to revegetate the above sites will be selected from vegetation species currently used by Bloomfield on the mine site and described in the draft Rehabilitation Management Plan.

Procedures for water management, erosion control, topsoil management, weed control, fertilising, etc will also be in accordance with current procedures, as detailed in the current draft Rehabilitation Management Plan.

The final landform contours for the area of additional overburden emplacement to the south-east of the Save-A-Mile haul road is shown on ***Figure 4.*** This Plan shows that the elevated area of the road will be extended to the south-east, with the slope tapering towards the lower elevated forest area to the north-east. After completion of overburden emplacement, the area will be revegetated to extend into the

forested area to the north-east. Species and rehabilitation procedures will be as per the existing Rehabilitation Management Strategy and will be similar to the area of rehabilitation that can be seen immediately to the south on ***Figure 4***. Water diversion banks and sediment control measures will be established prior to dumping of overburden in the area to manage potentially sediment laden water from the area prior to its movement into the lower elevated forested area to the north east.

The final landform contours for the additional overburden emplacement and rehabilitation areas to the north and south-east of the existing mine pits are shown on ***Figure 5*** and ***Figure 6*** respectively. These figures show that for the northern site, the area is already disturbed and supports only poor quality pasture and will be shaped to fill in a slightly lower elevated area, with the area remaining generally flat. After overburden emplacement of approximately 50,000 bcm's, rehabilitation and revegetation will be undertaken in accordance with the objectives and procedures of the Rehabilitation Management Strategy. The site will be revegetated to blend with the existing vegetation to the north, with a buffer retained for the continuing use of the Wattle Tree Drive haul road which borders the south-eastern boundary.

The south-eastern site, where approximately 100,000 bcm's of overburden will be dumped for shaping and rehabilitation over approximately 6 months, will be shaped to form a slightly elevated mound in keeping with the surrounding elevations. This area will be revegetated with a range of pasture and tree species similar to those used in current rehabilitation in the nearby southern areas of the site.

Construction of the new powerline corridor onto the open cut mine site will not interfere with any existing or planned rehabilitation areas. Rehabilitation of the corridor, after completion of mining, will be in accordance with the objectives and procedures provided by the Bloomfield Landscape Management Plan, which includes the Rehabilitation Management Strategy and Mine Closure Plan. As the corridor is currently within a forested area, on completion and removal of infrastructure the corridor will be revegetated with similar species to those in the surrounding area, pending the final land use requirements of the landowner.

6.3 Biodiversity

An Ecological Assessment of the proposed Modification Activities has been prepared by Hunter Eco and is provided in ***Appendix B***. Each of the areas to be disturbed were investigated.

Wattle Tree Drive is an existing access track and therefore unvegetated, with some Rhodes Grass on the fringes.

The two out-of-pit emplacement areas to the south-east and one to the north are located on either cleared ground or in areas with only spontaneous regrowth of exotic grasses and wattles. The previously rehabilitated area adjacent to Save-A-Mile Highway also contains a mix of planted Spotted Gum and Wattles.

The overhead powerline corridor & infrastructure area is forested with Spotted Gum (*Corymbia maculata*) and Red Ironbark (*Eucalyptus fibrosa*) being the main canopy species. Lower Hunter Spotted Gum – Ironbark Forest, consistent with that of the listed Endangered Ecological Community (EEC) in the *Threatened Species Conservation Act 1995* (TSC Act) *Lower Hunter Spotted Gum – Ironbark Forest* is present, together with Coastal Plains Smooth-barked Apple Woodland. No threatened flora species were noted as present.

Relocation of a section of the powerline would require construction of a 40 metre wide corridor, removing approximately one hectare of native vegetation outside the existing Project Area, and removal of approximately 10 hectares of native vegetation within the existing approved Project Area for infrastructure associated with the relocated powerline. This includes approximately seven hectares of Lower Hunter Spotted Gum-Ironbark Forest Endangered Ecological Community (LHSGIF EEC).

Of the proposed modification areas, only the relocated powerline corridor and infrastructure area would necessitate the removal of remnant vegetation. The other areas are located either on open ground or rehabilitated opencut areas. Habitat in these disturbed areas was found to be in poor condition and unsuitable for any of the threatened species recorded in the area.

Given that the area to be cleared for the relocated powerline corridor is continuous with the area referred to as the 'eastern block' in the Bloomfield EA, the ecology assessment has been based on the data from that original report. Data from the Atlas of NSW Wildlife was updated and a habitat tree survey was conducted in the area to be cleared. Detailed methods that were used to investigate the ecology of the area are provided in ***Appendix B***.

An assessment of the possible impact of the proposed powerline corridor construction and associated land clearing on threatened species and endangered communities was undertaken in accordance with the *Draft Guidelines for Threatened Species Assessment* (DECC & DPI 2005). A review of the threatened species profiles shows that there were threatened species that could be found on the subject site under different conditions to those prevailing at the time of this investigation or could be found in similar habitat in the immediate region. An impact assessment was carried out with respect to these species, threatened flora and fauna species and any endangered ecological communities that were recorded during the field surveys.

The proposed clearing will result in the loss of approximately seven hectares of LHSGIF EEC. However, there is approximately 145 hectares of this community in the immediate vicinity of the proposed disturbance area and the loss of seven hectares would not have a significant impact on the remaining community. This is demonstrated by the fact that historical clearing around remnants of this EEC has not impacted negatively on those remnants.

In the area to be cleared, 31 trees having potential fauna habitat hollows were found. One tree of particular note in the vicinity was a tall Spotted Gum (*Corymbia maculata)* which contained a large raptor nest. This tree is located just outside of the proposed clearing area and care will be taken during clearing not to disturb this tree, such as by pushing other trees against it.

The recommendation of the ecology assessment has been adopted as a control for the proposed clearing for the powerline corridor and powerline infrastructure area. This recommendation is that in the week prior to clearing, these trees will be inspected at dusk to determine whether any of the hollows are occupied. If there is a colony of microbats or a threatened owl using the hollows, clearing will be timed to minimise any impact. When clearing is then carried out, these trees will be left standing for at least five nights so that any occupants can relocate. When these trees are brought down, an experienced fauna ecologist will be present to attend to any fauna that may still be occupying the hollows.

6.4 Air Quality

An air quality assessment of the Modification Activities, including additional modelling, was undertaken by Holmes Air Sciences. This assessment is provided in ***Appendix C***. Cumulative assessment, considering emissions from the Donaldson Open-Cut and Abel Underground coal mines, located to the east of Bloomfield, were also included in the assessment.

The results of the modelling were plotted as shown in ***Appendix C***. The results indicate the potential area of impact for 24-hour average PM_{10} (sub-ten micron particulate matter), annual average PM_{10}, TSP (total suspended particulates) and dust deposition, as a result of the proposed modifications, together with the existing operations. The modelling results indicate that there are no predicted exceedances of the required criterion due to the modifications of Bloomfield Colliery at any of the surrounding residences.

6.5 Greenhouse Gas Emissions

An inventory of potential greenhouse gas emissions from the Bloomfield Mine as approved was provided in the Bloomfield EA (Appendix G, Holmes Air Sciences in

Business Environment, 2008). Greenhouse gas emissions for two scenarios – being a ROM coal extraction volume of 800,000 tonnes per annum (tpa) from Year 2 onwards, and a ROM coal extraction volume of the maximum approved 1.3 mtpa from Year 2 onwards - were provided. Greenhouse gas emissions from the use of Scope 1 items (diesel and petrol), Scope 2 (electricity) and Scope 3 items (such as the manufacturing of site products and the burning of the product coal by another country) were calculated. It was found that the averaged, total estimated greenhouse gas emissions from mine activities would be in the order of 402,000 tonnes, or an average of 36,545 tonnes per year. This does not include the greenhouse gases released from the burning of the product coal in the export country, which would equate to an additional 19 million tonnes over the life of the mine.

The Modification Activities will improve mine efficiencies by reducing the distance and double handling of overburden spoil. By creating these small out-of-pit overburden emplacements, rehabilitation outcomes for the total site will be enhanced and overburden from the pit that would have needed to be double-handled, or relocated to make room within the pit for operations, will be more efficiently managed. Use of the proposed Wattle Tree Drive haul road will greatly improve efficiencies in the haulage of coal from the northern end of the pits (S Cut) to the washery, as trucks will not have to drive via the southern Save-A-Mile haul road. These efficiencies will reduce the amount of diesel used in site vehicles, a Scope 1 greenhouse gas. Efficiencies, estimated at up to 5% of total on site diesel usage, will reduce the use of diesel over the life of the mine by 2.95 megalitres, reducing greenhouse gas emissions by approximately 8,860 tonnes (based on a 3 kg Co_2 equivalent/litre diesel usage emission factor as used in the Bloomfield EA).

6.6 Noise

A Noise Assessment of the proposed Modification Activities was undertaken by Heggies Pty Ltd and is provided in ***Appendix E***. The assessment considered the potential noise impact of the proposed Modification Activities, including construction activities, for example, for the corridor, powerline and Wattle Tree Drive, and any required mitigation strategies. The assessment was prepared with reference to Australia Standard AS 1055: 1997 *Description and Measurement of Environment Noise* and in accordance with DECCW's NSW *Industrial Noise Policy*, the *Interim Construction Noise Guideline* and the NSW *Environmental Noise Control Manual*.

The noise criteria and controls provided by the Bloomfield Approval and the project-specific noise levels (PSNLs) developed for the Bloomfield EA have been referenced by the noise assessment.

In order to meet these criteria, no Modification Activities will occur during the night-time period (10.00pm-6.00am). Therefore sleep disturbance noise goals are not applicable. Construction hours (for the powerline corridor and construction of Wattle Tree Drive) will between the hours of 7.00am and 6.00pm Monday to Friday and 8.00am to 1.00pm Saturdays.

Specific noise mitigation and management procedures have been developed for the various Modification Activities. These are as follows:

- East of Save-a-Mile haul road (Area B)
    - The height of the overburden emplacement area will be limited to an RL of 100 metres.
    - Daytime operations (7.00am to 6.00pm Mondays to Saturdays, 8.00am to 6.00pm Sundays) will be in the southern part of the dump to raise the dump and provide screening for the evening (6.00pm-10.00pm) and morning shoulder (6.00am-7.00am) operations.
    - During evening and morning shoulder periods, the following controls will be in place:
        - the drill and clearing dozer will be worked in a shielded location; dumping will only occur in the northern part of the dump;
        - the dozer will only operate in a shielded location in the northern part of the dump;
        - an earthen bund will be constructed in the approved dumping area to the south of the existing haul road to a minimum height of 80 metres RL;
        - There will be no coal haulage from S-Cut during the morning shoulder period.
- Northern area (Area C)
    - Dumping and rehabilitation during the daytime period only.
- South-eastern area (Area E)
    - Dumping and rehabilitation during the daytime period only (7.00am to 6.00pm Mondays to Saturdays, 8.00am to 6.00pm Sundays);
    - Dumping will be restricted to approximately 70 hours of work;
    - A front end loader will replace the dozer at the Area E dump once the emplacement reaches an RL of 52 metres.

The above noise control procedures are consistent with those provided by the Approval, namely that dump sites are required to be situated within the pit during night-time operations, hence no out-of-pit dumping and emplacement reshaping will

occur at the emplacement areas during periods other than day-time except where an earthen mound (Area B) is constructed to adequately reduce noise from Area B.

The worst case noise conditions have been considered with operational noise levels for the Modification Activities modelled under calm and prevailing meteorological conditions at the nearest affected residences to the Bloomfield site.

The location of the described receptors is as follows. ***Figure 9*** shows their location. These locations are the same as those referenced in the Bloomfield EA. Missing letters are those locations that, whilst relevant to the Bloomfield EA, are not relevant to these proposed Modification Activities due to their distance from the activities.

- E – Browns Road, Black Hill;
- F – Black Hill, Road, Black Hill;
- G – Buchanan Road, Buchanan;
- H – Mt Vincent Road, Louth Park;
- L – Kilshanny Avenue, Ashtonfield;
- M – John Renshaw Drive, Buttai;
- N – Lings Road, Buttai.

Considering the proposed noise controls noted above and the mitigation and management measures as detailed in the Approval, operational noise levels are predicted to meet the existing Approval criteria at locations G, H, L and N (refer ***Figure 9*** for location of receptors).

Operational noise levels from Area B operations are predicted to exceed the existing Approval criteria at location M during day-time operations and at locations E and F when the height of the dump exceeds 81 metres. During the morning shoulder period under a prevailing NW wind, Approval criteria will be exceeded for Area B at locations E, F and M and at location L during evening and morning shoulder periods under a prevailing SE wind.

Operational noise levels for Area E are predicted to exceed Approval criteria at locations E, F and M during the day-time period. Works at Area E are minor in nature and will be limited to a total of 70 hours work over a few months, during day-time periods only.

Noise levels at all of the above mentioned locations are predicted to meet the approved noise levels established with reference to the INP and reported in the EA for the approved development and are therefore unlikely to cause disturbance at the surrounding residential receivers.

Since the operational scenario modeled is likely to represent an acoustically worst-case scenario, actual operational noise levels from the proposed Modification Activities are likely to be less than those predicted.

The Modification Activities in these areas are short-term and will take a maximum of six to twelve months to complete. Controls such as restricting operating times and limiting of height and types of equipment to be used will minimise potential impacts that may occur.

Predicted construction noise levels from the development of Wattle Tree Drive as an alternative haul route and the construction of the overhead powerline and corridor are predicted to be significantly below the relevant construction noise criteria.


N
GREENHILLS
METFORD
ASHTONFIELD
THORNTON
LOUTH PARK
TAILINGS DAM
WASHERY
CREEK CUT
S CUT
BUCHANAN
DONALDSON OPENCUT
BLACK HILL
A
B
C
D
E
F
G
H
I
J
K
L
M
N
0
1 km
LEGEND
07-0087 Approval Area
Proposed Project Area
A Representative Residences
A Modified Project Location
FIGURE 9
LOCATION OF NEAREST NOISE RECEPTORS
75W MODIFICATION APPLICATION
BLOOMFIELD COLLIERY
MAY 2010

6.7 Heritage

As described in the Bloomfield EA (Business Environment, 2008), there are no recorded European heritage sites on or in close proximity to the Bloomfield Mine. Therefore, no impact on items of European heritage would occur as a result of the Modification Activities.

South East Archaeology was engaged to undertake an Aboriginal Heritage Impact Assessment of the proposed powerline corridor. This assessment, which included a field survey undertaken with representatives of the local Aboriginal community, is provided in ***Appendix D***. An assessment of the other modification areas was not undertaken as these are all within existing areas of mine disturbance.

No Aboriginal heritage evidence was identified within the powerline study area, and no Aboriginal heritage sites have previously been recorded in this location. The heritage potential of the landform units within the subject area is considered low generally due to the moderate gradients and in the case of the ridge crest, the high level of existing impacts. A very low density distribution of artefacts may occur across the study area, however the potential for sub-surface deposits of artefacts that may be in situ and/or of research value is very low. Other types of heritage evidence (such as grinding grooves or scarred trees) are not anticipated to occur within the study area and other Aboriginal cultural values or associations were not identified during the course of the assessment. It is therefore considered that the potential for significant impacts to occur to the Aboriginal heritage resources from the powerline corridor construction are very low.

Site protocols in place under the Bloomfield Aboriginal Heritage Management Plan will remain relevant for the proposed Modification Activities.

6.8 Visual Aspects

Due to the undulating topography of the Bloomfield site, the majority of the Modification Activities will be screened from viewpoints external to the mine site. Detailed internal and external mine site viewing, from a range of viewpoints, indicated that all Modification Activities except sections of Wattle Tree haul road would be screened from external viewpoints by existing topography or vegetation.

The powerline corridor is within a forested area remote from any external viewpoint, such as residence or road. Buchanan Road and Louth Park residences, the nearest to the corridor site, do not view the site due to intervening topography.

The overburden emplacement and landform shaping proposed for two areas of the south-east of the site cannot be viewed from John Renshaw Drive or residences to

the south due to intervening topography and vegetation. As shown on ***Figure 6***, the south-eastern landform shaping area is screened from residences to the south and John Renshaw Drive by existing mature forest vegetation abutting the southern boundary. In the visual assessment undertaken for the EA (Business Environment, 2008), the emplacement along the southern boundary was shown to be visible from some sections of John Renshaw Drive. This proposed emplacement will not be viewed from these locations due to its location to the east, where there is a screen of existing vegetation and elevated intervening topography not available in the approved emplacement area. This change in vegetation cover along the southern boundary can be seen on ***Figure 2***. Residents to the south of John Renshaw Drive who raised previous concerns regarding night lighting will not be affected by the Modification Activities proposed for the more southern areas of the mine site as these areas are further to the east and therefore hidden by intervening topography and vegetation.

Figure 5 shows the existing mature forest vegetation to the north and west of the northern landform shaping area that screens this area from views from the north and north-east, where residences within Ashtonfield are located.

Wattle Tree Drive is located at a high elevation on the Bloomfield site and has the potential to be viewed from some residences and roads within Ashtonfield. ***Photograph 6*** shows the view looking south-west along Tipperary Drive, from near the intersection with Kilshanny Avenue, Ashtonfield. Mt Sugarloaf west of Newcastle can clearly be seen on the horizon in the middle of the photograph. Two items of Bloomfield's operations can be viewed in the photograph. The washery can be seen as a slight grey disturbance in the left of the scene, and the slight mound viewed to the right is the highest elevation of Wattle Tree Drive, as it changes direction from north to east as it heads towards the washery.

The slight disturbance that can be seen due to Wattle Tree Drive will be improved by the proposed modification as the works will include stabilisation of the batter and revegetation. The works will also include the construction of a bund to the north of the haul road to screen trucks from views to the north-east. The disturbance that is currently seen will therefore blend with the surrounding view once trees grow on the batters, and trucks will be screened.

With haul trucks proposed to use Wattle Tree Drive, headlights of these trucks as they travel around the bend have the potential to be seen from this location at night. However, due to the bund and this viewpoint being approximately 2.5 km from the haul road bend, the impact of this disturbance will be minimal. Also, as the bund is constructed and the trees grow on the batter, headlights will be screened. Other sections of Ashtonfield Estate generally have views towards the Bloomfield site screened by existing vegetation or are oriented away from the site.

Photograph 6 View towards Bloomfield Mine site from Tipperary Drive, Ashtonfield

6.9 Other Issues

6.9.1 Water, Erosion & Sedimentation

The Water Management Plan for the Bloomfield site ensures the effective water management of the whole Bloomfield site, including those parts of the site that are approved under the Donaldson approval. The current water management system includes the following:

- Existing surface water storages and sediment control dams (Lake Kennerson, Lake Foster, Possums Puddle and stockpile Dam) and the pipelines and drains that allow water to be transferred between these storages, or discharged off site;
- Pumps for the supply of water from Lake Foster to the washery;

- Pumps for the supply of groundwater extracted from old underground workings to supplement water supply to the washery when required;
- The washery associated stockpile areas and the Stockpile Dam;
- Previously mined areas including S Cut and Creek Cut used for disposal of wastes from the washery (coarse rejects and fine tailings) and the rehabilitation of these areas following completion of waste disposal; and
- Mine water discharge regime as per the existing Environmental Protection Licence.

The proposed northern area to be reshaped is currently draining poorly and the proposed works will improve this situation and drain the area towards the haul road and the existing drainage system.

All existing overburden dump areas and pit operations are drained via pipes and pumps to Lake Kennerson (refer ***Figure 2*** for location). The proposed overburden emplacement area adjacent o Save-a-Mile haul road will be shaped to drain into this current system. The eastern part will drain towards an existing drainage line that contains surrounding partially undisturbed forest. Diversion banks and sediment control measures will be provided at the toe of the batter on the north-eastern side to divert any sediment laden flow away from this existing channel until the area is stabilized and revegetated.

The proposed south-east landform reshaping area covers part of the area used as a drainage channel from the pits to Lake Kennerson. This channel will be relocated around the area of proposed disturbance to ensure this system continues to operate.

6.9.2 Socio-Economic and Community Issues

There are no potential socio-economic or community impacts predicted for the proposed Modification Activities. The activities will not alter the workforce, hours of operation, life of the mine or current approved extraction tonnages.

7. Required Modifications To The Existing Approval and Statement Of Commitments

7.1 Required Modifications to the Existing Approval

The Modification Activities will require amendments (shown in ***bold italics***) to the following parts of the Bloomfield approval (07_0087) issued on 3 September 2009:

- 2. Terms of Approval – The Proponent shall carry out the project generally in accordance with the:
- (a) EA;
- (b) Statement of Commitments;
- (c)conditions of this approval;
- ***(d) Modification to the Approval and conditions provided by this Modification***
- ***Appendix 2 – Project Map – to be modified to include the modified Project Area.***

No changes to the conditions of the Approval, such as noise, air quality or blasting criteria or monitoring regimes, or the water management, landscape management, heritage, visual or greenhouse gas requirements are required necessary for this proposed modification to the Approval.

The various required plans that have been prepared for the Approval, such as the Landscape Management Plan, Rehabilitation Management Plan and various monitoring plans will be amended to include the Modification Activities as relevant.

7.2 Statement of Commitments for the Modification

The following Statement of Commitments (SOCs) has been prepared to append to the SOCs provided with the 2009 Approval. These SOCs include all of the proposed measures that would be implemented to avoid, minimise, mitigate and/or offset the potential impacts of the modification:

- Bloomfield Collieries will undertake mining activities within the modified Project Area as defined by the EA and this document;
- A pre-clearing protocol to protect any threatened species using trees within the powerline clearing area will be implemented during construction of the corridor;
- The identified nesting tree adjacent to the powerline clearing area will be protected during construction of the powerline and associated infrastructure to prevent accidental damage by machinery;
- Construction of the powerline and the associated infrastructure will occur only during day-time periods as specified for construction works;

- Operational controls that will be put in place during works within particular areas are as follows:

  - East of Save-a-Mile haul road (Area B)
    - The height of the overburden emplacement area will be limited to an RL of 100 metres.
    - Daytime operations (7.00am to 6.00pm Mondays to Saturdays, 8.00am to 6.00pm Sundays) will be in the southern part of the dump to raise the dump and provide screening for the evening (6.00pm-10.00pm) and morning shoulder (6.00am-7.00am) operations.
    - During evening and morning shoulder periods, the following controls will be in place:
      - the drill and clearing dozer will be worked in a shielded location; dumping will only occur in the northern part of the dump;
      - the dozer will only operate in a shielded location in the northern part of the dump;
      - an earthern bund will be constructed in the approved dumping area to the south of the existing haul road to a minimum height of 80 metres RL;
      - There will be no coal haulage from S-Cut during the morning shoulder period.
  - Northern area (Area C)
    - Dumping and rehabilitation during the daytime period only (7.00am to 6.00pm Mondays to Saturdays, 8.00am to 6.00pm Sundays)
  - South-eastern area (area E)
    - Dumping and rehabilitation during the daytime period only (7.00am to 6.00pm Mondays to Saturdays, 8.00am to 6.00pm Sundays);
    - Dumping will be restricted to a maximum of 70 hours of work;
    - A front end loader will replace the dozer at the Area E dump once the emplacement reaches an RL of 52 metres.

- The existing water drainage channel to Lake Kennerson will be re-routed around the disturbance area prior to commencement of works in the south-eastern area;
- Diversion banks and sediment control measures will be provided at the toe of the proposed batter of the emplacement area adjacent to Save-a-Mile haul road prior to works commencing to protect downstream areas;
- A bund will be constructed adjacent to Wattle Tree Drive and trees will be planted to screen this area, thereby minimising aesthetic impacts and stray light;
- Wattle Tree Drive construction will occur only during day-time periods as specified for construction works.

8. Project Justification and Conclusion

Bloomfield Colliery is an open cut mining operation located approximately 20 kilometres north-west of Newcastle, within the Cessnock Local Government Area. In September 2009, Bloomfield Colliery was granted approval by the NSW Minister for Planning to complete its twelve year mining and rehabilitation program. Prior to approval being granted, open cut and underground mining had occurred at various locations on the site for approximately 175 years.

This Environmental Assessment Report has been prepared to accompany an application by Bloomfield to modify the approval for the Bloomfield Coal Project pursuant to section 75W EP&A Act 1979.

The modification application seeks planning approval for the following Modification Activities:

- extension of the approved Project Area by 259 hectares to enable the proposed Modification Activities to be undertaken,
- upgrade and use of Wattle Tree Drive as an alternative haul route for coal being transported to the washery from the northern pit areas;
- additional overburden emplacement (1.2 million bank cubic metres) and rehabilitation adjacent to the existing Save-A-Mile haul road;
- additional 50,000 bank cubic metres overburden emplacement, out-of-pit landform reshaping and rehabilitation in a disturbed northern area;
- additional 100,000 bank cubic metres overburden emplacement, out-of-pit landform reshaping and rehabilitation in the south-east of the mine site (previous 'K Cut'); and
- construction of a corridor and overhead powerline from an existing powerline onto the open cut mine site, relocating an existing powerline to enable the continuation of mining, together with some clearing for associated infrastructure consisting of transformers, earth leakage grids and cables.

The Project Area under the existing Approval only includes those parts of the site that were directly related to the completion of mining, as well as rehabilitation associated with this mining. The two active pits ('Creek Cut' and 'S Cut'), the current coal haul road ('Save-A-Mile') to the washery, the workshop used to maintain mining equipment and an internal access road providing access between the open cut pits, were the only works included in the Project Area. The main reason for this omission was to avoid confusion between the Approval and any planning approval for the adjacent Abel Underground Mine, which also included approval for the Bloomfield washery and tailings disposal areas and included the whole Bloomfield Lease area in its Project Area.

The effect of soon to commence amendments to the Mining Act require that all mining-related activities are subject to planning approval. Therefore, Bloomfield must obtain planning approval for the expansion of the Project Area to include all future rehabilitation and associated works. The Modification Activities have been examined to ensure they fall within this extended area. Only the Modification Activities will be undertaken within this extended Project Area.

The upgrade and use of an existing access road as a haul road ('Wattle Tree Drive') would reduce current conflict between coal haul trucks and overburden dump trucks within the pits, thus improving mine safety. It would also reduce fuel usage over the remaining life of the mine by reducing the distance coal is transported from the pits to the washery. Noise, air quality and visual investigations of this route predict minimal environmental impact from this proposed haul road and improved energy savings for the mine.

Three areas are proposed to receive additional overburden material prior to reshaping and rehabilitation. These areas are required to improve the efficiency of overburden management by providing additional room in-pit and avoiding the need to double-handle overburden material during Stage 2. Areas were selected based on their ability to receive the material with minimal change to the overall landscape and minimal environmental impact. These three areas are considered not to have been rehabilitated to current standards and Bloomfield wishes to improve long term rehabilitation outcomes in these locations.

A 14.2 hectare area in the south-east of the mine site, adjacent to the Save-A-Mile haul road, is proposed to replace an existing out-of-pit overburden emplacement area approximately 850 metres to the south-west. Work in this area would occur over approximately twelve months. The area would then be revegetated to current standards.

A small area to the north of the existing Creek Cut and an area in the south-east of the site (the previous 'K Cut' area adjacent to the southern boundary) are also identified to receive minor amounts of overburden material (50,000 and 100,000 bank cubic metres respectively) over a six to twelve month period, prior to minor landform shaping and rehabilitation.

Air quality, noise, visual and biodiversity investigations indicate minimal environmental impact associated with these three emplacement areas. Any potential noise impact from operations on the south-eastern works will be minimised through a series of noise controls and management actions associated with the operation of equipment and placement of material.

An existing overhead powerline and corridor is located to the north-west of the Bloomfield Project Area. The powerline currently provides power for the water cart filling station, water pumps and shovel. To enable the approved expansion of Creek Cut and S Cut to proceed, the southern section of this powerline, within the current

Project Area, needs to be relocated. It is proposed to relocate a 330 metre section of the powerline, requiring construction of a 40 metre wide corridor, and clearing within the Project Area for associated infrastructure. This clearing will require the removal of approximately 11 hectares of bushland, which includes 7 hectares of Lower Hunter Spotted Gum-Ironbark Forest Endangered Ecological Community.

Air quality, noise, Aboriginal heritage, visual and biodiversity studies were undertaken for the proposed powerline corridor. No Aboriginal heritage evidence was located and the potential for evidence is considered to be low. Impacts associated with visual, air quality and noise are also considered to be minimal. The proposed powerline relocation will result in the loss of approximately seven hectares of LHSGIF EEC. However, there is approximately 145 hectares of this community in the immediate vicinity of the proposed disturbance area and the loss of seven hectares would not have a significant impact on the remaining community. This is demonstrated by the fact that historical clearing around remnants of this EEC has not impacted negatively on those remnants. Clearing procedures will be put in place in the proposed clearing area to ensure any threatened fauna located within trees is identified and relocated prior to the felling period.

A risk assessment has been undertaken to identify any potential environmental impacts associated with the proposed Modification Activities. The requirements of the Director-General have been addressed and the Modification Activities discussed with relevant government authorities and the Bloomfield Community Consultative Committee. Detailed studies of the key environmental issues have identified that there will be minimal environmental impacts associated with the proposed activities and that these can be avoided, further mitigated or controlled through the implementation of existing environmental management procedures or additional procedures that have been identified for these particular activities.

The Modification Activities are required to ensure the continued safe and efficient operation of the Bloomfield Colliery. Alternatives to these activities were considered, and the selected designs and methods are considered the most efficient and effective. The modifications allowing minor out-of-pit emplacement and landform reshaping will enable previously disturbed areas to be rehabilitated to current industry standards.

9. References

Bloomfield Collieries (2010) Draft Landscape Management Plan - 2/3/10 final draft

Business Environment (2008) Bloomfield Colliery Completion of Mining and Rehabilitation – Part 3A Environmental Assessment Project Application 07_0087.

DECC & DPI (2005) Draft Guidelines for Threatened Species Assessment. NSW Government, Sydney.

NSW Department of Planning (2006) *Lower Hunter Regional Strategy* . NSW Government, Sydney.

NSW Government (2010) *Lower Hunter Regional Strategy re-endorsed by the NSW Government* (NSW Government Press Release, 18 February 2010).

Bloomfield Colliery

Project Approval No. 07_0087

Extension of the Project Approval Area for out-of-pit overburden emplacement and rehabilitation, alternative haul road and powerline relocation.

Application for a Modification to the Minister's Approval Pursuant to Section 75W of the *Environmental Planning and Assessment Act 1979*

APPENDICES

September 2010

Appendix A - Director-General's Requirements – Section 75W Modification

Appendix B – Biodiversity Assessment

Appendix C – Air Quality Assessment

Appendix D – Aboriginal Heritage Impact Assessment

Appendix E – Noise Impact Assessment