STATEMENT OF ENVIRONMENTAL EFFECTS

Stratford Coal Mine
Coal Handling Modification

June 2008

STRATFORD COAL

STRATFORD COAL MINE
COAL HANDLING MODIFICATION
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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

LIST OF ATTACHMENTS

LIST OF APPENDICES

EXECUTIVE SUMMARY

ES1.0 BACKGROUND

The Stratford Coal Mine is owned and operated by Stratford Coal Pty Ltd a subsidiary of Gloucester Coal Ltd and has been operating since 1995. Stratford Coal Pty Ltd also owns and operates the Bowens Road North Open Cut which is located immediately to the north of the Stratford Coal Mine (Figure ES-1) and commenced operation in 2003 under a separate consent.

Another Gloucester Coal Ltd subsidiary, Duralie Coal Pty Ltd, owns and operates the Duralie Coal Mine, which is located some 20 kilometres to the south. The run-of-mine coal produced at the Duralie Coal Mine is railed to the Stratford Coal Mine, where it is unloaded and processed.

ES2.0 REASON FOR THE COAL HANDLING MODIFICATION

This Statement of Environmental Effects has been prepared by Stratford Coal Pty Ltd to support an application to modify the Stratford Coal Mine Development Consent (the Coal Handling Modification). The Coal Handling Modification would improve the efficiency of handling and storage of run-of-mine coal and product coal at the Stratford Coal Mine.

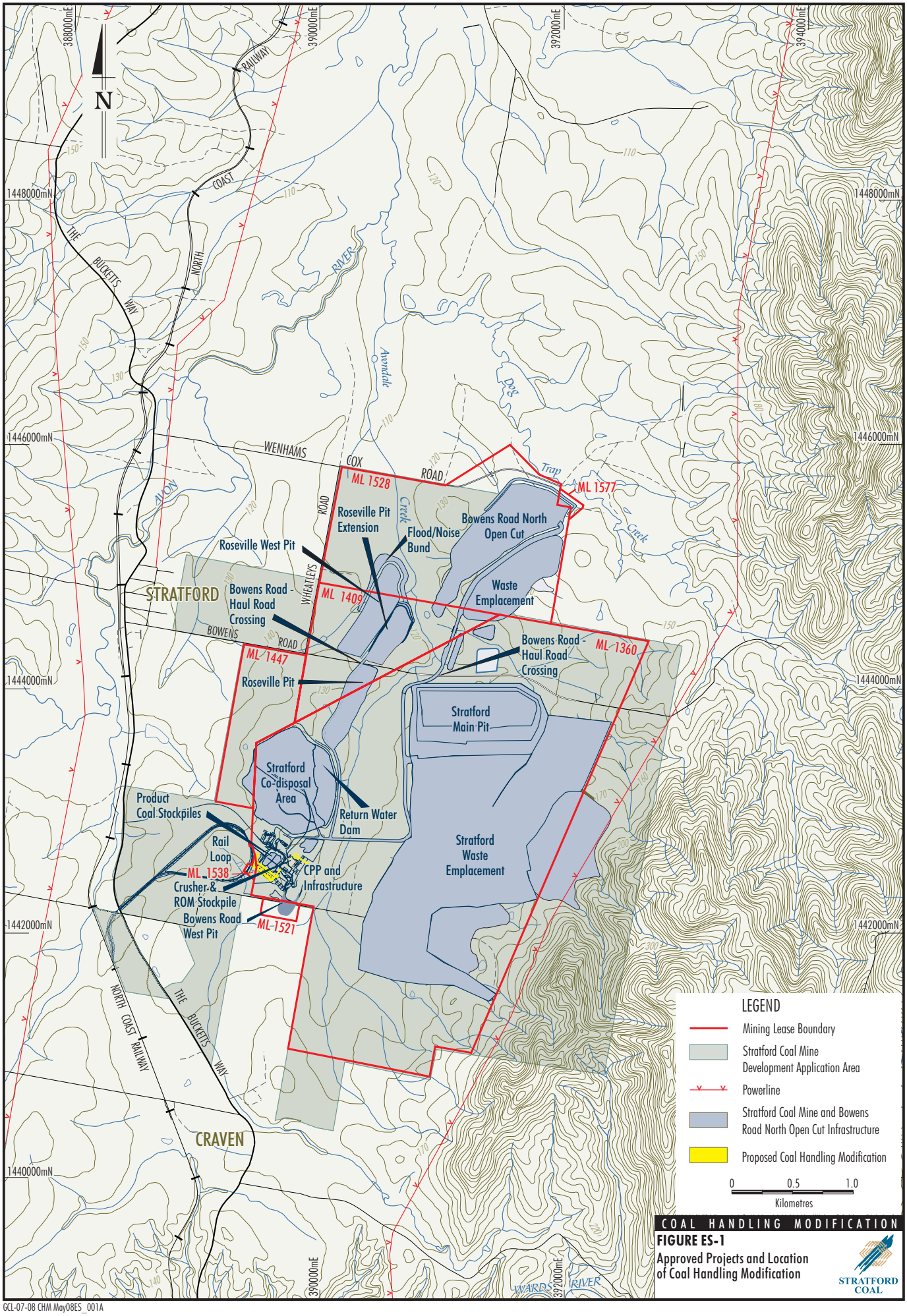
ES3.0 DESCRIPTION OF THE COAL HANDLING MODIFICATION

The Coal Handling Modification at the Stratford Coal Mine comprises (Figure ES-1 and ES-2):

- Modification to the run-of-mine stockpile area, including a small additional run-of-mine coal conveyor and second run-of-mine coal stacker, for improved separation of Duralie Coal Mine thermal and coking coals on the run-of-mine pad.
- Modification to the product coal stockpile area, including an additional (smaller) product coal stockpile and associated product coal conveyors and coal reclaim systems.

The Coal Handling Modification is located on land owned by Gloucester Coal Ltd, within the current Stratford Coal Pty Ltd Mining Leases, and within the existing coal preparation plant operational and water management area.

No changes are proposed to the currently approved Stratford Coal Mine open cut operations, run-of-mine coal or product coal production rates, or train loading. The modifications to the run-of-mine and product coal handling system outlined above are the only proposed changes.



COAL HANDLING MODIFICATION

FIGURE ES-1

Approved Projects and Location of Coal Handling Modification

STRATFORD COAL

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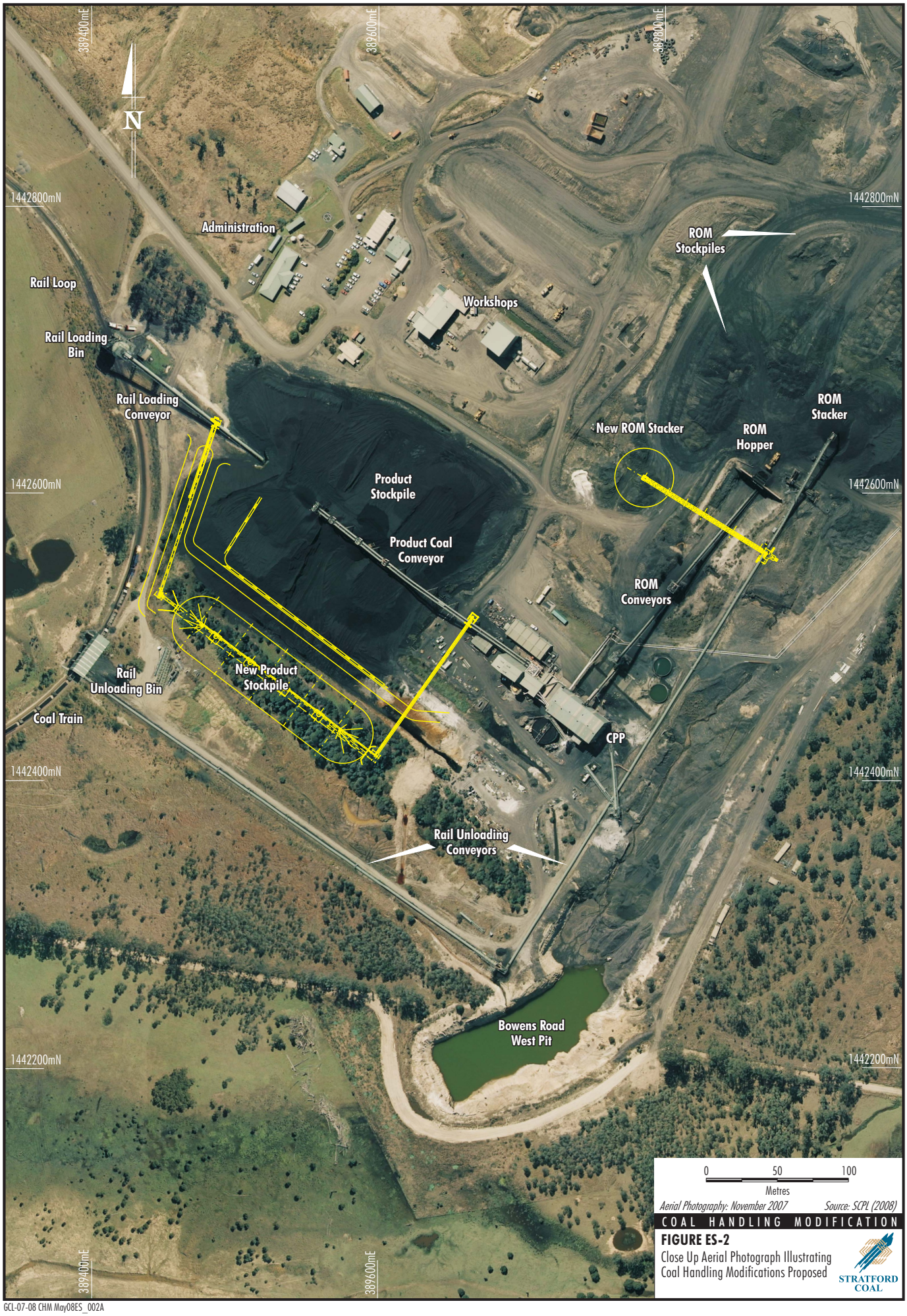

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ES4.0 ENVIRONMENTAL REVIEW

In order to assess the Coal Handling Modification, environmental reviews have been conducted to determine whether it would alter the findings of the original environmental assessments. The environmental reviews have concluded:

- From a noise perspective the Coal Handling Modification is minor in nature, and cumulative operational noise of the Coal Handling Modification (with the existing operations) would comply with relevant existing noise criteria at all nearby dwellings. Cumulative daytime construction noise would comply at all dwellings except for one nearby residence (Bagnall) where the predicted construction noise levels would marginally exceed the existing daytime criteria.
- The potential air quality emissions of the SCM with the Coal Handling Modification are expected to continue to comply with applicable dust deposition and suspended particulate criteria at the nearest private receptors.
- Potential visual impacts associated with the Coal Handling Modification would be limited given that the new conveyors and stockpiles are within the current SCM CPP operational area, and would be very similar in height, topographical orientation, construction and colouring to the existing conveyors and coal stockpiles, and would extend the existing product coal stockpile area by approximately 100 m (i.e. remaining in the existing CPP operational area, as bounded by the rail unloading conveyors).
- No change to the operational transport requirements of the SCM are proposed.
- The Coal Handling Modification is situated wholly within the existing SCM CPP operational area, and therefore no impacts to flora or fauna species, populations, ecological communities, or their habitats are anticipated.
- The Coal Handling Modification is situated wholly within the existing SCM CPP water management area, and therefore potential impacts to surface water quality and quantity, including erosion and sediment control, would be limited.
- With the continued implementation of the existing environmental management measures and monitoring programmes, no significant additional effects on residents or existing environmental values are expected to result from the Coal Handling Modification.

The environmental reviews conducted for this SEE indicate that the SCM incorporating the Coal Handling Modification is of minimal environmental impact, and when compared to the SCM (DA 23-98/99), would be substantially the same development.

1 INTRODUCTION

1.1 GENERAL

This Statement of Environmental Effects (SEE) assesses a proposed modification to the existing Stratford Coal Mine (SCM) that is owned and operated by Stratford Coal Pty Ltd (SCPL), a subsidiary of Gloucester Coal Ltd (GCL).

SCM is located within the Gloucester Shire, approximately 90 kilometres (km) north of Newcastle, New South Wales (NSW) (Figures 1 and 2). GCL is a major landholder in the Stratford area (Figures 3A and 3B).

The proposal is known as the Coal Handling Modification. The Coal Handling Modification would improve the efficiency of handling and storage of run-of-mine (ROM) coal and separation of product coal at the SCM, and would include the installation of additional conveyors and coal stockpiles.

1.1.1 Background

Stratford Coal Mine Development History

The potential environmental impacts associated with the original development of the SCM were assessed in the *Stratford Coal Project Environmental Impact Statement* (the SCP EIS) (SCPL, 1994).

Development consent was granted for the mine by the Minister for Planning in December 1994 (Development Application [DA] 73/94). Construction of the SCM commenced in January 1995 and coal production began in June 1995. The SCM was originally an operation producing approximately 1.1 million tonnes per annum (Mtpa) of high quality coking and thermal coal over a 14 year mine life and included an open cut mine, rail loop, rail loading facilities, coal preparation plant (CPP) and associated facilities.

Since commencement of the operation, a number of alterations to the original SCM have been made, including the issue of a new Development Consent. A summary of these alterations is provided below:

- In 1996, an application to access the Roseville coal seam, increase the ROM coal mining rate from 1.8 million tonnes per annum (Mtpa) to 3.4 Mtpa and increase the saleable coal production rate from 1.1 Mtpa to 1.7 Mtpa was assessed via the *Proposal to Increase Saleable Coal Production to 1.7 Mtpa* (SCPL, 1996) and associated supporting information. The modification was approved by the Minister for Urban Affairs and Planning in July 1996.
- In 1998, a new DA was lodged to allow the SCM to accept Duralie Coal Mine ROM coal for processing through the SCM CPP and allow disposal of associated CPP rejects at SCM. This new DA was assessed by the *Proposed Modifications to Stratford Coal Mine Statement of Environmental Effects* (SCM Alterations SEE) (SCPL, 1998). The new DA was approved in February 1999 by the Minister for Urban Affairs and Planning (DA 23-98/99).
- In 2000, a modification to further increase saleable coal production was assessed via the *Stratford Coal Mine – Domestic Production Modification Statement of Environmental Effects* (SCPL, 2000). This modification increased saleable coal production to 2.3 Mtpa by increasing the ash content in the coal product, whilst maintaining the approved ROM mining rate at the SCM at 3.4 Mtpa. The modification to DA 73/94 was approved by the Minister for Urban Affairs and Planning in July 2000.

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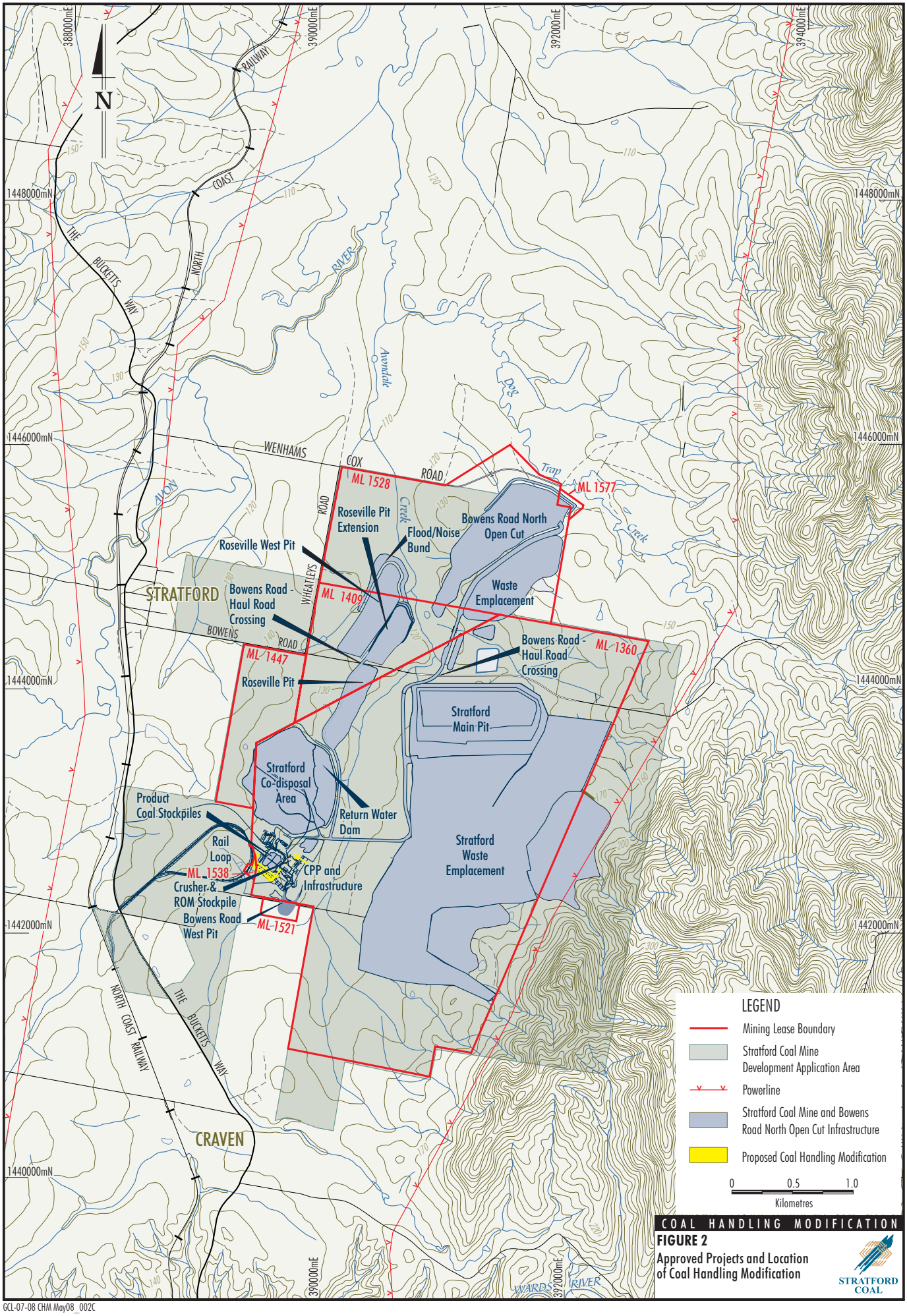

COAL HANDLING MODIFICATION

FIGURE 2

Approved Projects and Location of Coal Handling Modification

STRATFORD COAL

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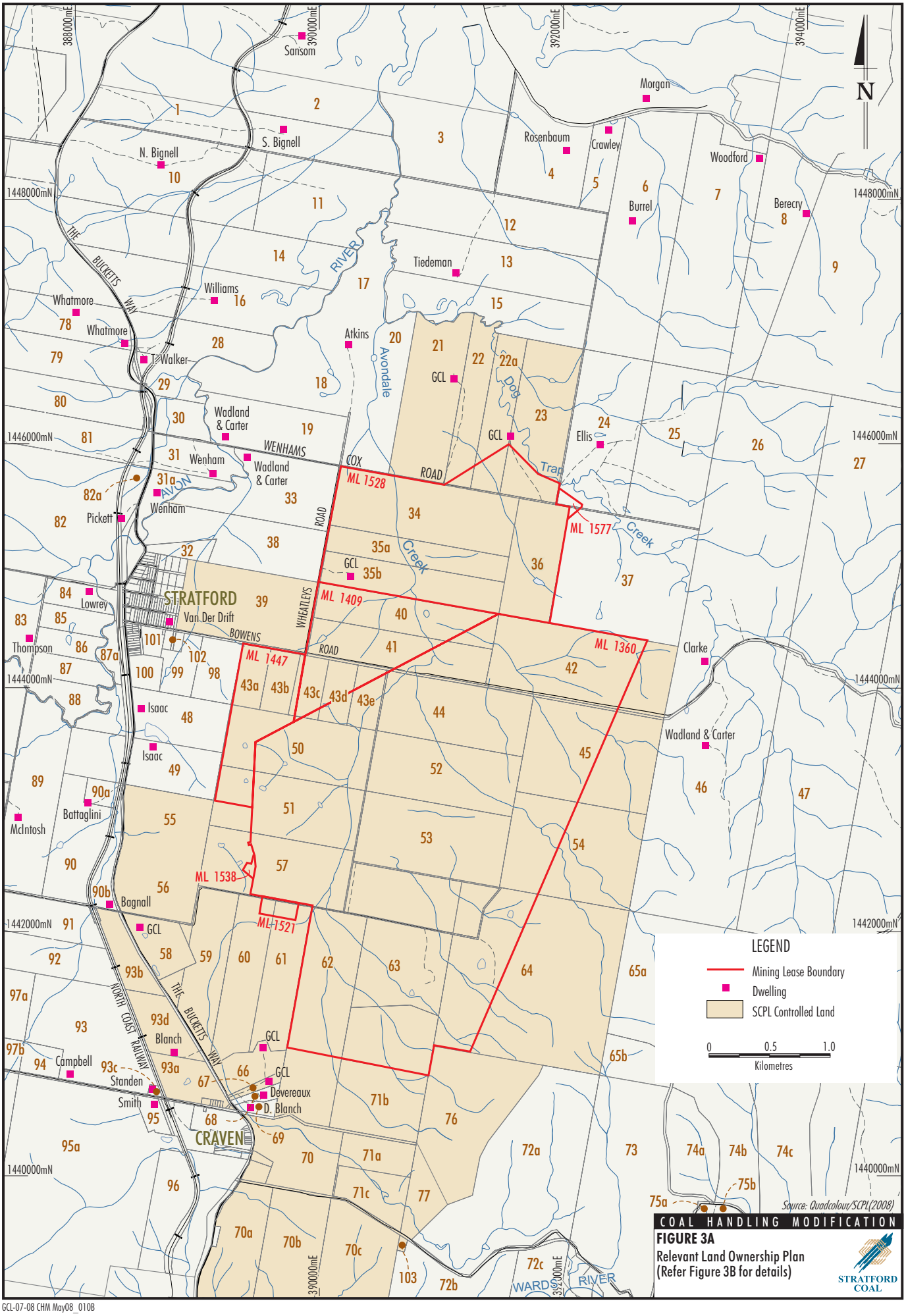

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1. NE Bignell
2. Yarrawonga Pastoral Company Pty Ltd
3. Farley (Gloucester) Pty Ltd
4. DJ & DL Rosenbaum Pty Ltd
5. CD & TA Crawley
6. M Burrel
7. JE Woodford
8. AS Berecry
9. AS Berecry
10. NE Bignell
11. NE Bignell
12. J Tiedeman
13. J Tiedeman
14. NJ Williams
15. J Tiedeman
16. NJ Williams
17. SJ & LM Atkins
18. SJ & LM Atkins
19. TW Carter & YL Wadland
20. SJ & LM Atkins
21. Gloucester Coal Limited
22. Gloucester Coal Limited
22a. Gloucester Coal Limited
23. Gloucester Coal Limited
24. SG Ellis & Sons Pty Ltd
25. SG Ellis & Sons Pty Ltd
26. RC & CA Clarke
27. Burns
28. K & A Whatmore
29. T Walker
30. FA Wenham
31. FA Wenham
31a. FA Wenham
32. KJ & ME Albert
33. TW Carter & YL Wadland
34. Gloucester Coal Limited
35a. Gloucester Coal Limited
35b. Gloucester Coal Limited
36. Gloucester Coal Limited
37. SG Ellis & Sons Pty Ltd
38. FA Wenham
39. Gloucester Coal Limited
40. Gloucester Coal Limited
41. Gloucester Coal Limited
42. Gloucester Coal Limited
43a. Gloucester Coal Limited
43b. Gloucester Coal Limited
43c. Gloucester Coal Limited
43d. Gloucester Coal Limited
43e. Gloucester Coal Limited
44. Gloucester Coal Limited
45. Gloucester Coal Limited
46. TW Carter & YL Wadland
47. RL Bagnall
48. AS Isaac (North)
49. AS Isaac (South)
50. Gloucester Coal Limited
51. Gloucester Coal Limited
52. Gloucester Coal Limited
53. Gloucester Coal Limited
54. Gloucester Coal Limited
55. Gloucester Coal Limited
Lease to BC & EA Bramley
56. Gloucester Coal Limited
Lease to BC & EA Bramley
57. Gloucester Coal Limited
Lease to BC & EA Bramley
58. Gloucester Coal Limited
59. Gloucester Coal Limited
Lease to BC & EA Bramley
60. Gloucester Coal Limited
61. Gloucester Coal Limited
62. Gloucester Coal Limited
63. Gloucester Coal Limited
64. Gloucester Coal Limited
65a. TW Carter & YL Wadland
65b TW Carter & YL Wadland
66. Gloucester Coal Limited
67. Gloucester Coal Limited
68. C Devereaux
69. DJ Blanch
70. Gloucester Coal Limited
70a. Gloucester Coal Limited
70b. Gloucester Coal Limited
70c. Gloucester Coal Limited
71a. Gloucester Coal Limited
71b. Gloucester Coal Limited
71c. Gloucester Coal Limited
72a. SS Ellis
72b. SS Ellis
72c. C & C Bertolino
73. W Mantle
74a. MI Rounsley
74b. JA & DS Gartrell
74c. NJ Porter
75a. AJ & LM Hancock
75b. G & PB McCalden
76. Gloucester Coal Limited
77. Gloucester Coal Limited
78. K & A Whatmore
79. K & A Whatmore
80. FA Wenham
81. FA Wenham
82. GL Harris
82a. JH Pickett
83. M Thompson
84. KJ & R Lowrey
85. KJ & R Lowrey
86. KJ & R Lowrey
87. KJ & R Lowrey
87a. KJ & R Lowrey
88. AS Isaac
89. EAR & RK McIntosh
90. RL Bagnall
90a. WJ & JM Battaglini
90b. RL Bagnall
91. SH Morgan
92. SH Morgan
93. AR & AM Campbell
93a. LA Blanch
93b. Gloucester Coal Limited
Lease to BC & EA Bramley
93c. PA Standen
93d. LA Blanch
94. EA Yates
95. T Smith
95a. R Smith & SC Davern
96. R Smith & SC Davern
97a. LJ & IR Dillon
97b. GL & MF Wallace
98. Crown Land - Forestry Reserve
99. RV & LM Orlandi
100. Crown Land - Travelling Stock Reserve
101. Gloucester Shire Council
102. Crown Land - Reserve for Cemetery
103. MJ Ellis

Source: Quadcolour/SCPL(2008)

COAL HANDLING MODIFICATION

FIGURE 3B

Relevant Land Ownership List

STRATFORD COAL

- In July 2003, DA 73/94 was relinquished and DA 23-98/99 was commenced.
- In 2003, a modification of DA 23-98/99 to extend the approved Roseville Pit by some 600 metres (m) to access approximately 0.25 million tonnes (Mt) of additional ROM coal (Roseville Pit Extension) and to reinstate the 2.3 Mtpa saleable coal production rate (as per the 2000 modification to the DA 73/94 consent) was assessed via the *Stratford Coal Mine Modification Statement of Environmental Effects* (SCM 2003 SEE) (SCPL, 2003). As a component of this assessment a SCM operational noise assessment compliant with the *NSW Industrial Noise Policy* (NSW INP) (EPA, 2000) was conducted. The Roseville Pit Extension was approved under delegation by the Minister for Planning in January 2006.
- In 2006, a modification of DA 23-98/99 to develop a small pit adjacent to and contiguous with the approved Roseville Pit Extension was assessed via the *Stratford Coal Mine Roseville West Pit Modification Statement of Environmental Effects* (RWP SEE) (SCPL, 2006a). The Roseville West Pit was approved by the Minister for Planning on 16 February 2007. The approved SCM is shown on Figure 2.

SCM Interaction with Bowens Road North Open Cut Coal Mine

The Bowens Road North Open Cut Coal Mine (BRNOC) is located immediately to the north of the SCM (Figure 2) and was assessed by the *Bowens Road North Project Environmental Impact Statement* (BRN EIS) (SCPL, 2001a). The BRNOC was approved by the Minister for Urban Affairs and Planning in July 2001 and operates under a separate Development Consent (DA 39-02-01). ROM coal from BRNOC is transported to the SCM CPP where it is blended with SCM coal and transported off-site for sale.

BRNOC is a daytime operation and coal mining, coal handling and stockpile operations are carried out between 7.00 am and 7.00 pm. BRNOC is consented to produce up to 0.9 Mt of ROM coal per annum. It is anticipated that the BRNOC will operate until 2011.

SCM Interaction with Duralie Coal Mine

Through its subsidiary company Duralie Coal Pty Ltd (DCPL), GCL also owns the Duralie Coal Mine (DCM) which is located some 20 km south of the SCM (Figure 1) and supplies ROM coal to the SCM CPP.

The potential environmental impacts associated with the development of the DCM were assessed in the *Duralie Coal Environmental Impact Statement* (DCPL, 1996). The Duralie Coal Project included an open cut mine, rail loop, CPP and associated facilities. Following a Commission of Inquiry, the NSW Minister for Urban Affairs and Planning granted development consent for the mine in August 1997. In 1998, a new DA was lodged with the NSW Department of Urban Affairs and Planning (DUAP) to allow DCM ROM coal to be railed to SCM for washing in the existing Stratford CPP. The environmental implications of the modification were assessed via the *Proposed Alterations to Duralie Coal Project Statement of Environmental Effects* (Duralie SEE) (DCPL, 1998). The alteration to DCM was approved in February 1999 by the Minister for Urban Affairs and Planning and a new consent was issued.

DCM commenced coal production in 2003. ROM coal mined at DCM is transported by rail to SCM on the North Coast Railway. DCM ROM coal is unloaded at the SCM and washed in the CPP. Product coal is then railed to market with that produced from SCM and the BRNOC.

1.1.2 Overview of the Proposed Modification

The Coal Handling Modification at the SCM comprises (Figures 4 and 5):

- Modification to the ROM stockpile area, including a small additional ROM coal conveyor and second ROM coal stacker, for improved separation of DCM thermal and coking coals on the ROM pad.
- Modification to the product coal stockpile area, including an additional (smaller) product coal stockpile and associated product coal conveyors and coal reclaim systems.

The Coal Handling Modification is located on land owned by GCL (Figures 3A and 3B), within the current SCPL Mining Leases, and within the existing CPP operational and water management area (Figure 4).

No changes are proposed to the currently approved SCM open cut operations, ROM coal or product coal production rates, or train loading. The modifications to the ROM and product coal handling system outlined above are the only proposed changes.

Table 1 provides a comparative summary of the original (DA 23-98/99), currently approved, and modified Projects.

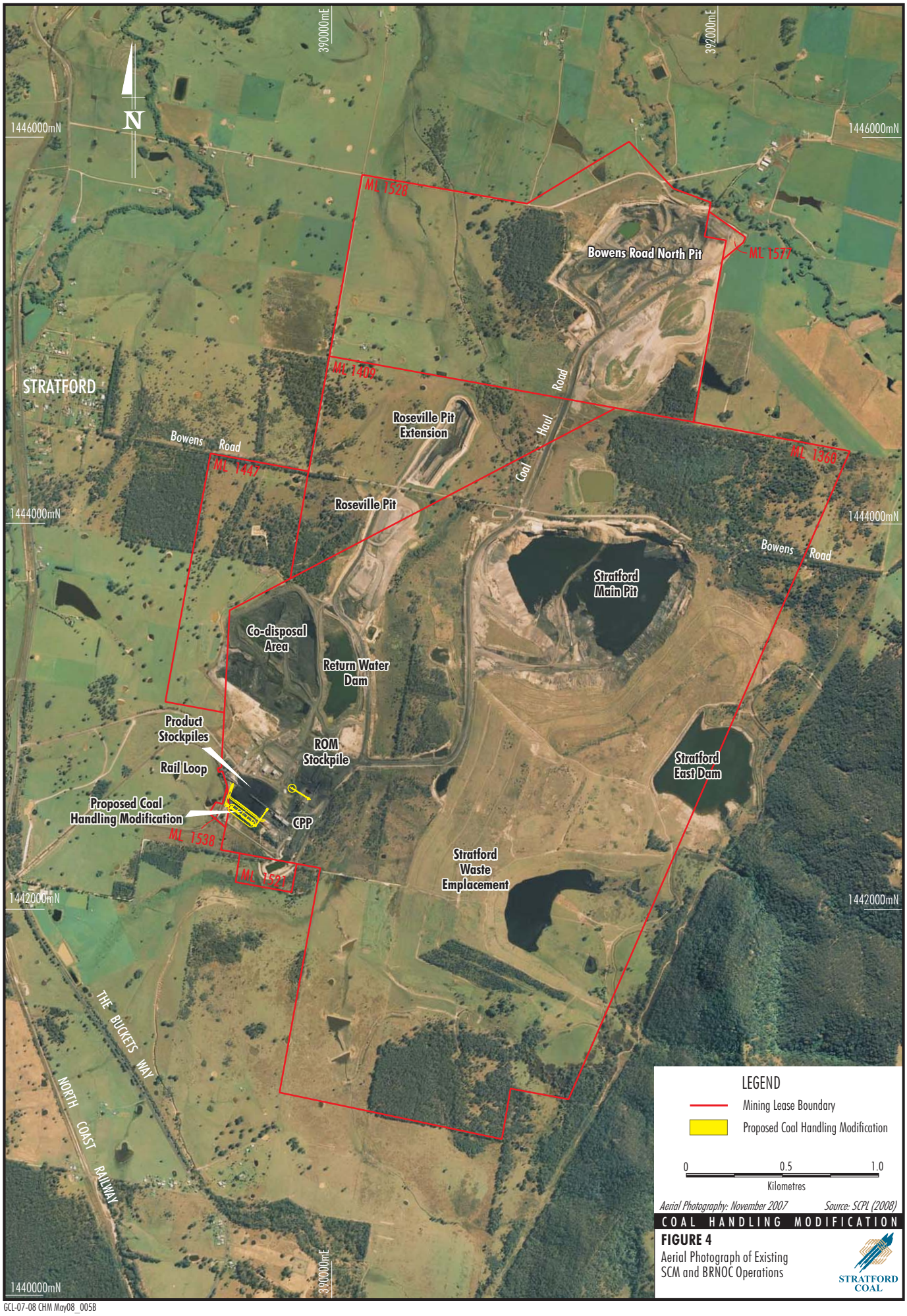
As shown in Table 1, SCM with the Coal Handling Modification is substantially the same development as SCM as approved under DA 23-98/99, and therefore modification via Section 96(1A) or Section 96(2) of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) could potentially be justified. An overview of the approved SCM operation is provided in Section 2, a description of the Coal Handling Modification is provided in Section 3, and an environmental review of the Coal Handling Modification is provided in Section 4.

1.2 LEGISLATIVE FRAMEWORK

The original DA for the SCM was assessed under Part 4 of the EP&A Act. The SCM was approved by the Minister in December 1994, but as described in Section 1.1, a new consent was obtained following a new DA to allow rail unloading and CPP treatment of DCM ROM coal at SCM in 1999. Attachment 1 contains a copy of the current Development Consent for SCM (DA 23-98/99).

In January 2008 SCPL wrote to the NSW Department of Planning (DoP) providing an overview of the Coal Handling Modification seeking advice on the necessary approval process for the Coal Handling Modification. In March 2008 DoP advised that the modification could be assessed under Section 96(2) of the EP&A Act (Attachment 2). Section 96(2) of the EP&A Act states:

> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
>
> *(a) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all)…*



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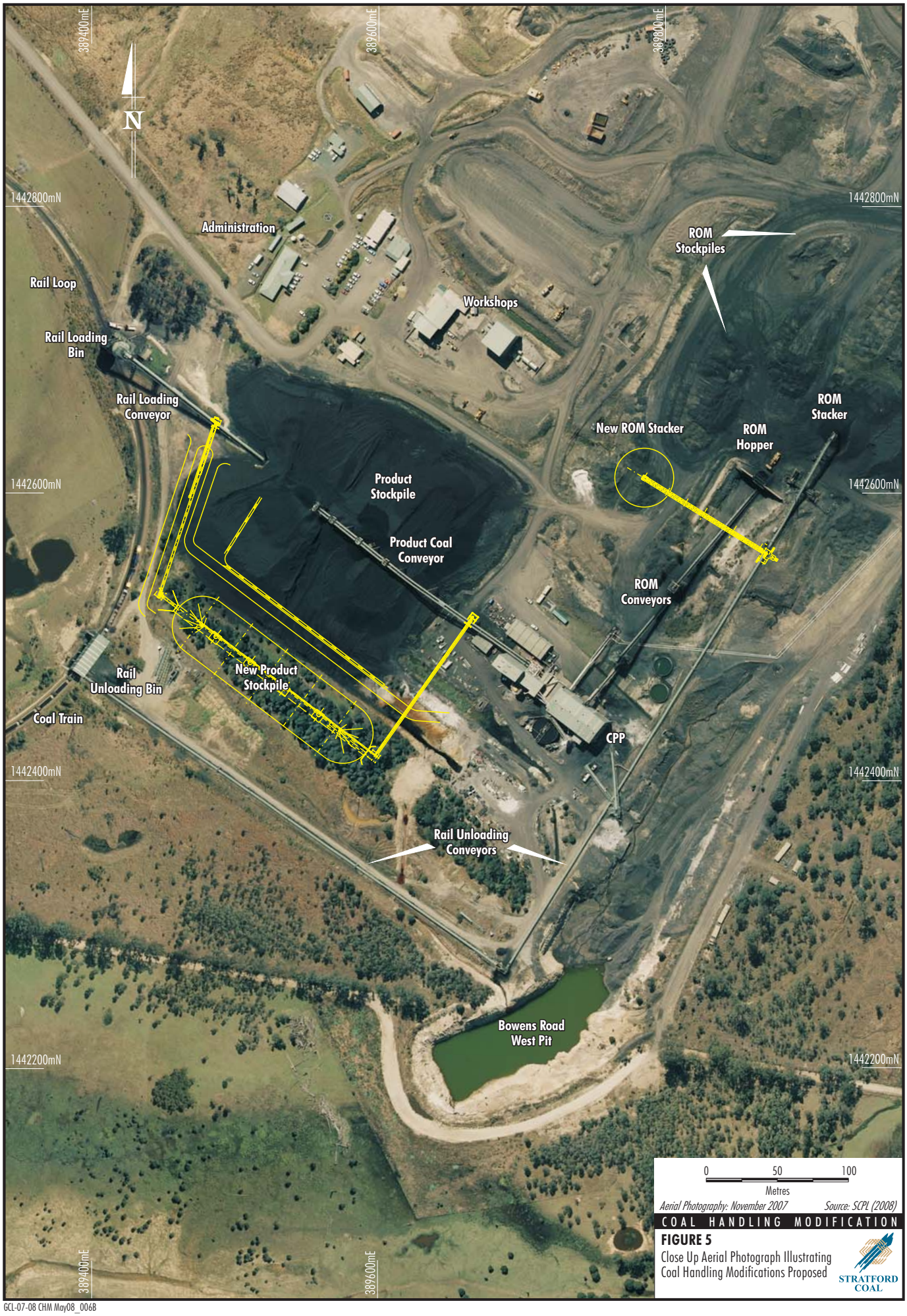


COAL HANDLING MODIFICATION

FIGURE 5

Close Up Aerial Photograph Illustrating Coal Handling Modifications Proposed

STRATFORD COAL

GCL-07-08 CHM May08_006B

Table 1
Comparison of the Approved and Modified Projects

Project Feature	SCM 1999 (DA 23-98/99)	Approved SCM Incorporating Roseville Pit Extension and Roseville West Pit	Modified SCM with the Coal Handling Modification
Life of Mine ROM Coal	• 23.5 Mt.	• Up to approximately 24.15 Mt.	• Unchanged
Annual ROM Coal Production	• Up to 2.1 Mtpa.	• Unchanged.	• Unchanged
Coal Processing	• CPP processing of up to 3.4 Mtpa of ROM coal (from both SCM and Duralie).	• Unchanged.	• Unchanged
Annual Saleable Coal Production	• Up to 1.7 Mtpa.	• Up to 2.3 Mtpa.	• Unchanged
Open Cuts	• Stratford Main Pit, Roseville Pit.	• Extension of Roseville Pit and addition of Roseville West Pit.	• Unchanged
Waste Emplacement	• Combination of in-pit and out-of-pit waste emplacement.	• Unchanged.	• Unchanged
Total Waste Mined	• 69 million bank cubic metres (Mbcm).	• 73.55 Mbcm.	• Unchanged
Mine Fleet	• Excavators, haul trucks, water trucks, dozers, graders, scrapers, drills. • Approximately 20 items.	• Unchanged. • Fleet now reduced due to cessation of mining in the Stratford Main Pit.	• Unchanged. • Unchanged.
General Infrastructure	• Access roads, electricity supply and distribution, rail loop, CPP, train loading and unloading infrastructure, ROM coal stockpiles, coal handling equipment.	• Unchanged.	• Modified ROM coal and product coal conveyors, stockpiles, and product coal reclaim arrangements.
Operational Workforce	• Up to 110 people.	• Unchanged.	• Unchanged
Life of Mine	• 11 years.	• 17 Years from grant of Mining Lease.	• Unchanged
Duralie Train Unloading Hours	• 7.00 am-10.00 pm.	• Unchanged.	• Unchanged
Operating Hours	• Mine and CPP operating 24 hours per day 6 days per week. • Roseville pit only mined between 7.00 am and 10.00 pm.	• Unchanged. • Roseville West Pit only mined between 7.00 am and 10.00 pm.	• Unchanged • Unchanged
Water Supply	• Pit inflows and the on-site water management system.	• Unchanged.	• Unchanged
Operational Road Transport Requirements	• Road traffic associated with the workforce, consumables, visitors and general deliveries and maintenance vehicles.	• Unchanged.	• Unchanged

This SEE describes the Coal Handling Modification and provides justification for the conclusion that the Modified Project is of minimal environmental impact and is substantially the same as the Original Project (DA 23-98/99). Therefore, SCPL considers that the Coal Handling Modification could be assessed via Section 96(1A) of the EP&A Act.

Section 96(1A) of the EP&A Act states:

> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
>
> *(a) it is satisfied that the proposed modification is of minimal environmental impact, and*
>
> *(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all) …*

Local Environmental Plan

SCM is located in the Gloucester Local Government Area (LGA).

Clause 9(1) of the Gloucester Local Environment Plan (LEP) relevantly provides:

> *Except as otherwise provided by this plan, the Council shall not grant consent to the carrying out of development on land to which this plan applies unless the Council is of the opinion that the carrying out of the development is consistent with the objectives of the zone with which the development is proposed to be carried out.*

The Coal Handling Modification is located within an area zoned 1(a) (Rural Zone) in the Gloucester LEP under the EP&A Act. The objectives of Zone 1 (a) are as follows:

a) to encourage continued growth in the area's rural economic base,

b) to protect and conserve agricultural land and to encourage continuing, viable and sustainable agriculture,

c) to maintain the scenic amenity and landscape quality of the area,

d) to promote the protection and preservation of natural ecological systems and processes,

e) to provide proper and coordinated use and protection of rivers and water catchment areas,

f) to promote provision of roads that are compatible with the nature and intensity of development and the character of the area,

g) to allow mining where environmental and cultural impacts do not exceed acceptable limits and the land is satisfactorily rehabilitated after mining,

h) to recognise and encourage agriculture as a significant contributor to the area,

i) to encourage other forms of development, including tourism, that are compatible with agricultural activities and do not create undesirable environmental and cultural impacts.

The proposed modification is consistent with the objectives of Zone 1(a), as in accordance with objective (g), the environmental review conducted for this SEE (Section 4) indicates that the potential environmental impacts of minor alterations of the SCM associated with the Coal Handling Modification would be within acceptable limits and Section 5 describes the satisfactory rehabilitation of mine landforms at the cessation of mining.

Under clause 11 of the Gloucester LEP "Mines" are permissible on lands zoned Zone 1(a) (Rural Zone) with development consent.

In addition, Clause 35 of the Gloucester LEP requires that development on flood liable land (land inundated by the 1% Annual Exceedance Probability [AEP] flood event or as otherwise defined in any Flood Management Plan adopted by Council) should not be consented unless the consenting authority is satisfied the development will not:

a) risk the safety of the community or any residents of the land, and

b) impede the flow of water or increase the effect of the flood on the locality, and

c) adversely affect the water table in the locality,

and unless the Council has had regard to its Floodplain Management Plan and the provisions of the Floodplain Management Manual prepared by the New South Wales Government.

The Coal Handling Modification is located within the existing CPP operational and water management area to the west of Avondale Creek (Figure 2), and is not located within the Gloucester Shire Council (GSC) *Floodplain Management Plan* area.

SCPL has demonstrated over the life of the SCM that it can operate its mining operations effectively at the CPP adjacent to the floodplain of Avondale Creek. The Coal Handling Modification is within the existing CPP operational and water management area as bounded by the existing rail unloading conveyors (Figure 5).

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries), 2007

Clause 2 of *State Environmental Planning Policy* (SEPP) *(Mining, Petroleum Production and Extractive Industries), 2007* (the Mining SEPP) outlines a number of aims, the following of which are relevant to the Coal Handling Modification:

a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and

b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources…

Clause 12 of the Mining SEPP requires that before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must:

a) consider:

(i) the existing uses and approved uses of land in the vicinity of the development, and

(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and

(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and

b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and

c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).

The Coal Handling Modification comprises minor additions to the existing CPP and is wholly within the existing CPP operational and water management area. Accordingly, the Coal Handling Modification is consistent with, and would not change, the current landuse of the area. Adjacent to the SCM the primary land use is for agricultural purposes. The Coal Handling Modification would not result in any increase in potential impacts to the agricultural use of the surrounding land.

Clause 16, subclause (1), of the Mining SEPP requires that before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry that involves the transport of materials, the consent authority must consider whether or not the consent should be issued subject to conditions such as:

a) require that some or all of the transport of materials in connection with the development is not to be by public road,

b) limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools,

c) require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.

Clause 16, subclause (3), requires that the consent authority:

a) must not determine the application until it has taken into consideration any submissions that it receives in response from any roads authority or the Roads and Traffic Authority within 21 days after they were provided with a copy of the application, …

The Coal Handling Modification would involve a minor increase in truck and light vehicle movements associated with construction activities over a period of approximately nine months. Section 4.8 provides an environmental review of construction transport impacts. No changes to operational transport movements would occur as a result of the Coal Handling Modification, as no changes in ROM or product coal production, operational workforce, or consumable use at SCM are proposed.

Clause 17 of the Mining SEPP requires that before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring the rehabilitation of land that will be affected by the development. Relevantly, the consent authority must consider whether conditions of the consent should:

a) require the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated, or …

d) require steps to be taken to ensure that the state of the land, while being rehabilitated and at the completion of the rehabilitation, does not jeopardize public safety.

Rehabilitation of the CPP area is described in the SCP EIS and SCM Alterations SEE. Rehabilitation of the Coal Handling Modification (within the existing CPP operational area) would be consistent with these documents.

State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)

Clause 13 of SEPP 33 requires the consent authority, in considering a DA for a potentially hazardous or a potentially offensive industry, to take into account:

(c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and

(d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application)…

The SCM operates in accordance with the environmental management plans and management procedures (Section 2.6) required by the Development Consent (Attachment 1). These plans and procedures have been developed by SCM to minimise the environmental risks associated with operation of the mine.

The Coal Handling Modification does not significantly alter the consequences or likelihood of a hazardous event occurring at the SCM, as the operational activities on-site would be generally unchanged. Notwithstanding, environmental management and procedures would be updated to include the Coal Handling Modification where relevant (Sections 4 and 5).

State Environmental Planning Policy No. 44 (Koala Habitat Protection)

SEPP 44 requires the consent authority for any DA in certain LGAs (including the Gloucester LGA) to consider whether land subject to a DA is "*potential Koala habitat*" or "*core Koala habitat*".

The land subject to the Coal Handling Modification was assessed in the SCP EIS as 'largely cleared land', and is within the current SCM CPP operational area (Figure 5). The only vegetation in the area are the trees planted on the existing noise bund by SCPL. In accordance with Schedule 2 of SEPP 44 it can be concluded that the provisions of SEPP 44 do not apply to the Coal Handling Modification.

State Environmental Planning Policy No. 55 (Remediation of Land)

SEPP 55 aims to provide a State-wide planning approach to the remediation of contaminated land. Under SEPP 55, planning authorities are required to consider the potential for contamination to adversely affect the suitability of the site for its proposed use.

A consent authority must consider the following under clause 7(1):

(a) whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Further under clause 7(2), before determining an application for consent to carry out development that would involve a change of use of land, the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned (carried out in accordance with the contaminated land planning guidelines).

Because the Coal Handling Modification is within existing SCM Mining Leases (Figure 2) and the existing CPP operational and water management area, no change of landuse is proposed and no preliminary land contamination investigation is required.

Environment Protection and Biodiversity Conservation Act, 1999

The primary objective of the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) is to provide for the protection of those aspects of the environment that are of *national environmental significance*. The EPBC Act establishes a scheme requiring environmental assessment and approval of proposals likely to impact significantly upon such matters, which in the Act are termed *protected matters*.

The EPBC Act specifies seven matters of national environmental significance. These are:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international importance;
- listed threatened species and communities;
- listed migratory species;
- nuclear actions; and
- the Commonwealth marine environment.

A proposal that is likely to have a significant impact on a matter of environmental significance is described in the EPBC Act as a *controlled action*. A person proposing to take an action that may be a controlled action is required by the EPBC Act to refer the proposal to the Commonwealth Minister for the Environment, Heritage and the Arts. The Minister then decides whether or not the action is a controlled action.

The proposed modification is not located on a World Heritage property, National Heritage Place or Ramsar wetland area. It is not a nuclear action, nor would it impact on the Commonwealth marine environment.

The Coal Handling Modification is located within the existing CPP operational area (Figure 5) and would not involve the clearing of any remnant vegetation or habitat. Accordingly, it is considered that the Coal Handling Modification would not affect listed threatened species or communities or listed migratory species.

The Coal Handling Modification has therefore not been referred to the Commonwealth Minister for the Environment for consideration under the EPBC Act, as it is considered that no "controlled action" is proposed.

Other Approvals

In addition to the modified Development Consent which is required to be obtained from the Minister for Planning, the following other approvals may potentially be required as a result of activities associated with the proposed modification:

- A variation to the Environment Protection Licence (EPL) (No.5161) may be required from the Department of Environment and Climate Change (DECC) for construction noise levels at one residence (Section 4.2).
- A modification or addendum to the *Mining Operations Plan for Roseville West Open Cut as a satellite pit for the Stratford Coal Mine* (RWP MOP) (SCPL, 2007a) would be sought from the Director-General of the Department of Primary Industries - Minerals and Petroleum (DPI-MP).

1.2.1 Department of Planning Requirements for this SEE

DoP has provided a list of issues to be addressed by this SEE (Attachment 2). Table 2 itemises these aspects and indicates the Section of this SEE where the aspects have been addressed.

Table 2
Summary of DoP Issues to be Addressed in this SEE

Aspect	Section
Description of the Proposal.	3 1.5 1.1.2 2.9
Relevant statutory instruments.	1.2
Key issues: Assess the following potential impacts of the proposal during construction and operation, and describe what measures would be implemented to avoid, mitigate, manage or offset these impacts:	
• Noise;	4.2
• Air Quality;	4.3
• Aboriginal cultural heritage;	4.4.1
• Fauna and flora;	4.6
• Surface water management;	4.5
• Visual; and	4.1.4
• Social and economic.	4.9
Environmental Monitoring and Management.	5.2
Consultation.	1.4

1.3 STRUCTURE OF THIS DOCUMENT

Section 1 Provides an overview of the Coal Handling Modification, the legislative and approval requirements, consultation undertaken in relation to the proposed modification, and a justification of the proposal.

Section 2 Provides a description of the existing SCM.

Section 3 Provides a description of the Coal Handling Modification.

Section 4 Provides a review of the existing environment, assesses the Coal Handling Modification and describes how the existing SCPL environmental management systems and measures are available to manage and monitor any potential impacts.

Section 5 Outlines rehabilitation strategies and environmental management and monitoring of relevance to the Coal Handling Modification.

Section 6 Conclusions.

Section 7 References.

Attachment 1 and 2 and Appendices A to B provide supporting information as follows:

Attachment 1 Stratford Coal Mine – Development Consent Conditions

Attachment 2 Department of Planning – Issues to be Addressed in the SEE

Appendix A Noise Impact Assessment

Appendix B Air Quality Assessment

1.4 CONSULTATION

SCPL has developed and implemented a consultation programme for the SCM. The key objectives of the programme are to:

- inform government and public stakeholders about the progress and nature of its mining operations;
- recognise and respond to local concerns or interests; and
- continue dialogue between SCPL and stakeholders that commenced during the development of the SCP EIS.

Consultation with the community has been conducted by SCPL since the mid-1990s.

Consultation with community representatives and State and local government agencies regarding the Coal Handling Modification commenced in January 2008. A summary of consultation activities conducted by SCPL for the Coal Handling Modification, and how issues raised during consultation have been addressed is presented below.

1.4.1 Community Consultative Committee

A Community Consultative Committee (CCC) is in place at SCM and meets quarterly to discuss environmental management of the SCM and BRNOC and discuss future developments when relevant. The CCC includes representatives from the following organisations:

- GSC;
- SCPL (two representatives); and
- local landholders (six representatives including representatives of a community organisation).

The CCC is regularly briefed regarding SCPL's long-term development plans for SCM and DCM and regional exploration activities. Diagrams of the Coal Handling Modification were tabled and the proposed changes to the SCM operations were discussed at CCC meetings in February and May 2008.

1.4.2 State and Local Government Agencies

Consultation with the State and local government agencies about SCPL and DCPL development planning is on-going. Consultation with State and local government agencies for this development commenced in January 2008 when SCPL provided an overview of the Coal Handling Modification to the DoP and the Department of Primary Industries – Mineral Resources (DPI-MR).

In March 2008, DoP advised SCPL that the Coal Handling Modification could be assessed under Section 96(2) of the EP&A Act and provided SEE assessment requirements (Attachment 2). Following receipt of DoP's SEE requirements, SCPL commissioned air and noise impact assessment studies (refer Appendices A and B) and commenced preparation of the SEE.

Following completion of the air and noise impact assessment studies and the preparation of a draft SEE, discussions were then held with relevant State and local government agencies (i.e. Department of Water and Energy [DWE], GSC, DECC and DPI-MR) in May 2008 to discuss the Coal Handling Modification assessment findings and to address any issues raised by those agencies in the finalisation of the SEE (Section 1.4.4).

1.4.3 Local Landholders and Occupiers

In addition to consultation with landholder representatives through the CCC (Section 1.4.1), a number of local residents were identified as being potentially affected by minor changes to their visual or night-lighting environment as a result of the Coal Handling Modification. A description of the proposed changes to the approved SCM was provided by SCPL and changes to the local environment that could potentially occur as a result of the Coal Handling Modification were discussed in May 2008. Any concerns or issues with the Coal Handling Modification raised by the landholder were recorded.

Residents contacted by SCPL with respect to the potential for minor alteration of the visual or night-lighting environment at their dwelling as a result of the Coal Handling Modification included (Figure 3A):

- Wadland & Carter (46);
- Smith (95);
- Standen (93c); and
- Bagnall (90b).

In addition, as described in Section 4.2 and Appendix A, for a period during construction of the Coal Handling Modification it is anticipated that daytime construction noise combined with SCM operational noise would be slightly above the currently consented noise limit at the Bagnall residence. The results of the noise modelling and the prediction of slightly elevated daytime noise during construction of the Coal Handling Modification were discussed with Mr Bagnall in May 2008.

1.4.4 Summary of Issues Raised

DoP assessment requirements for the SEE are provided in Attachment 2 and are summarised in Table 2. Other issues raised during consultation that related to the Coal Handling Modification are outlined below (a reference to the Section[s] of the SEE where the issues are addressed is also provided):

- DECC advised that given the location of the Coal Handling Modification, it was unlikely that they would have any concerns apart from the management of on-site noise. DECC queried whether the Coal Handling Modification would add additional noise sources (Section 4.2 and Appendix A).
- DECC advised that a variation of EPL 5161 would not be required if the SCM noise environment would not change as a result of the Coal Handling Modification (Section 4.2 and Appendix A).
- DPI-MR advised that as part of the Coal Handling Modification, it would expect SCPL to improve management of aspects such as dust control (Section 4.3 and Appendix B), ROM pad optimisation (Section 3.1), bunding (Sections 4.1 and 4.2), water management (Section 3.4) and vegetative screen planting (Section 4.1.4).
- DPI-MR also requested SCPL to address the *increase handling and through-put of codisposal tailings* in the SEE. (As described in Section 3.2, no increase in ROM or product coal production and therefore no increases in the through-put of codisposal tailings are proposed as part of the Coal Handling Modification).
- DWE advised that any changes to the site water balance, including changes to inputs, storage or export of water from the operation should be identified in the SEE and reported in subsequent Annual Environmental Management Reports (AEMRs) (Sections 3.4, 4.5.1 and 5).
- One local landholder raised a concern that the existing stockpile/conveyor lighting was visible from his residence and that he was concerned the Coal Handling Modification may potentially increase operational lighting impacts at his residence (Section 4.1.4).

1.5 JUSTIFICATION OF THE PROPOSAL

The Coal Handling Modification would allow for improved handling and separation of coal types and provision of additional on-site product stockpile capacity. This would allow the SCM to:

- increase product coal stockpiles on-site to compensate for current coal capacity limitations and delays through the Port of Newcastle; and
- improve stockpile handling efficiency and quality assurance of coal products (i.e. reduced cross-contamination of coal types and improved coal blending capabilities) as a result of better separation of coal types on the stockpiles.

Due to improved separation of coal types and reduced need to move different coal types to/from unloading and loading points, it is anticipated that CPP stockpile dozer operating hours would be reduced. The Coal Handling Modification would also include the following noise mitigation measures:

- the remaining southern length of the visual/noise bund adjacent to the CPP would be increased in height by approximately 3 m to RL 140;
- the existing coal stockpile dozer would be replaced with a new quieter CAT D10 Dozer (or equivalent); and
- new conveyors and drives for the new product stockpile and ROM conveyor/stacker would be consistent with current low noise conveyor system technology, procured and commissioned in accordance with acoustic design specification.

Sections 4 and 5 describe the potential environmental impacts of the proposed modification and discuss how the environmental management and monitoring programmes at the SCM would be applied to manage the proposed modification. These sections provide a review of the potential environmental impacts of the Coal Handling Modification and conclude that the potential impacts of the Coal Handling Modification are minor and substantially the same as the approved SCM.

2 OVERVIEW OF THE STRATFORD COAL MINE

This Section provides a description of the existing SCM. A development history of the SCM is provided in Section 1.1.1.

2.1 MINING

Mining at the SCM has been optimised during development of the main deposit where SCPL expertise in mining geologically complex seams was developed. A combination of selective mining using excavators and dozers and bulk mining using dozers is utilised at BRNOC and SCM.

The approved mining rate at the SCM is up to 2.1 Mtpa of ROM coal. The approved mobile mining fleet for the SCM (i.e. the Roseville Pit Extension and Roseville West Pit) is outlined in Table 3.

Table 3
Approved SCM Mobile Fleet

No. of Items	Fleet Item
1	Drills
2	Excavators – Coal
2	Excavators – Waste
6	Caterpillar 789 Rear Dump Truck
6	Caterpillar 785 Rear Dump Truck
2	Dozer In Pit/Dump
1	Dozer (Stockpiles)
1	Front End Loader
1	Grader
1	Water truck

After: Richard Heggie Associates Pty Ltd (1998)

As stated in the BRN EIS, the SCM mine fleet has been reduced significantly since the closure of mining operations in the SCM Main Pit in 2003. Appendix A provides further detail.

The Roseville Pit Extension produces up to approximately 5,000 tonnes (t) per week or 0.25 Mtpa of ROM coal. This mining rate will continue once coal mining in the Roseville Pit Extension is completed and coal mining in the approved Roseville West Pit replaces this coal source. The BRNOC produces up to 0.9 Mtpa of ROM coal.

SCM fleet items operating the Roseville Pit Extension or the Roseville West Pit also periodically recover coal from the previous SCM reject co-disposal area (Figure 2) for re-processing of this previous waste material as thermal coal feed to the SCM CPP.

A separate contractor fleet will be utilised for overburden removal at the approved Roseville West Pit. The contractor fleet will comprise a primary waste rock excavator (120 t) and haul truck fleet of CAT 775E dump trucks, and will operate concurrently with the SCM fleet. Overburden removal at the approved Roseville West Pit is expected to commence in mid to late 2008.

As the Roseville Pit Extension and Roseville West Pit seams are thin and steeply dipping, coal is mined selectively with the small excavator and truck fleet. The haul trucks cross Bowens Road at the approved level crossing to the south of the Roseville Pit Extension (Figure 2).

As described in Section 4.8, SCPL has recently obtained approval from GSC to relocate Bowens Road to the north of the mining operations, and these crossings would be closed once the relocated road is established.

2.2 COAL PREPARATION PLANT AND RAIL LOADING AND UNLOADING

The SCM CPP processes both SCM and DCM ROM coal to produce saleable thermal and coking coal for domestic and export markets. The CPP processes up to 3.4 Mtpa of raw coal, producing up to 2.3 Mtpa of thermal and coking coal.

The SCM CPP is a two stage plant that comprises the following components:

- primary (coking coal) and secondary (thermal coal) circuits;
- coal breaking, coal crushing, dense medium cyclone, classification cyclone, Jameson cell, teetered bed separator, spiral separation equipment and a secondary flotation circuit;
- conveyors, bins and associated monitoring and maintenance equipment;
- internal bypass systems that minimise the washing of thermal coals;
- a partially cladded CPP building; and
- a co-disposal system for reject disposal on-site in the SCM Main Pit void.

The existing ROM pad area comprises (Figure 5):

- rail unloading conveyors transporting ROM coal from the rail unloading station to the ROM pad area at a rate of approximately 2,300 tonnes per hour (tph) and up to 8,000 t per day;
- ROM stacker and associated conical stockpile approximately 40 m diameter and 15 m high, providing approximately 6,000 t of ROM coal storage;
- associated mobile equipment that currently clear the conical stockpile to allow for stacking of different coal types;
- stockpiling of SCM coal on the ROM pad via haul truck; and
- ROM hopper fed by front-end-loader which distributes ROM coal on a conveyor for transport to the CPP for processing.

The existing product coal handling system comprises (Figure 5):

- product coal distributing conveyors, discharging product coal from the CPP at five locations along the product coal stockpile, depending on coal type;
- a product coal stockpile with capacity of approximately 200,000 t to 250,000 t;
- product coal reclaim system including reclaim feeders and a reclaim conveyor located beneath the product coal stockpile in a tunnel; and
- rail loading conveyor transporting product coal to the rail loading bin.

Both rail unloading and rail loading conveyor systems are in place at the SCM CPP to allow unloading of DCM ROM coal for treatment at the CPP and loading of blended BRNOC, DCM and SCM coals for transport to domestic or export markets. The rail unloading and loading system comprises (Figure 5):

- an unloading facility including rail unloading bin and unloading conveyors to the ROM pad (described above);
- a 2.9 km rail loop accommodating a 42-wagon train; and
- a 3,000 tph train loading facility including rail loading bin (receiving product coal from the product coal conveyor) and loading chute, and associated rail loading conveyor (described above).

2.3 WATER SUPPLY AND WATER MANAGEMENT

The SCM and BRNOC have an integrated water management strategy. The key components of the strategy are:

- separation of undisturbed area runoff from disturbed area runoff;
- collection and reuse of surface runoff from disturbed areas (including mining pre-strip areas, waste emplacements and haul roads);
- design of sediment dams to contain runoff generated from the 1 in 20 year, 72 hour rainfall event;
- capture and on-site containment of mine water, consisting of any groundwater inflows and/or surface water collection in the open cuts; and
- reuse of captured and contained mine water for dust suppression and CPP supply.

The main water supply storage for the SCM CPP is the 500 million litre (ML) Return Water Dam (Figure 4), while the major on-site storages comprise the Stratford East Dam (2,850 ML) and SCM Main Pit (37,000 ML) (Figure 4).

The SCM water management system operates under a surplus water balance, which means that over time there is a trend for increasing water storage on-site. The major water inflow to the site is rainfall-runoff generated from operational areas.

In 2001 SCPL applied to the NSW Environmental Protection Agency (EPA) (now the DECC) for a variation of EPL 5161 to permit the controlled release of contained waters from Stratford East Dam to Avondale Creek. The application under Section 58 of the *Protection of the Environment Operations Act, 1997* was approved as a trial in 2001 and when environmental conditions were suitable, water was released under the trial approval until 2003, when the SCM Main Pit void became available for excess water storage.

In 2006, SCPL applied to revise EPL 5161 to formalise the activity by removing the trial status. The variation was approved in July 2007, allowing release of mine waters during drought conditions with consent from the Environmental Protection Agency (now DECC).

2.4 GENERAL INFRASTRUCTURE

The following summarises general infrastructure at the SCM:

- Access to SCM is via the existing mine access road located off The Bucketts Way (Figure 2).
- The SCM rail loop and associated infrastructure provides a mechanism for the rail transport of DCM ROM coal to SCM and for the transport of product coal from SCM to market.

- The SCM electricity supply and distribution system is fed by two 33 kilovolt (kV) distributor lines running along The Bucketts Way. A private substation provides an 11 kV supply to the SCM which is reticulated around the site at variable voltages according to requirements.
- Primary buildings include the CPP, administration, workshop, stores and ablution buildings.
- Heavy vehicle servicing, parking and washdown facilities are available.
- Explosives, such as initiating products and detonators, are currently stored at DCM and used at the SCM in accordance with existing safety and operational procedures and Australian Standard (AS) 2187: *Explosives – Storage, Transport and Use*.
- The SCM diesel storage tank (110,000 L capacity) is operated in accordance with the requirements of AS 1940: *The Storage and Handling of Flammable and Combustible Liquids*.

2.5 REHABILITATION

As described in the RWP SEE, the primary objectives of the SCM rehabilitation programme are the minimisation of erosion and reinstatement of pre-mining land capability. Other objectives of rehabilitation are:

- the generation of a final rehabilitated landform which is consistent with general landforms in the area and which will blend in with the hills to the east;
- to provide a landform which is suitable for the primary final land uses of grazing, forestry and fauna habitat enhancement;
- to plan mining and overburden handling operations to minimise rehandling, reshaping and contouring;
- to minimise the amount of disturbed land awaiting rehabilitation; and
- to provide for the safe and environmentally acceptable disposal of CPP rejects.

The relevant Mining Operations Plans (MOPs) and AEMRs describe the on-going rehabilitation programme. A summary of the key elements of the rehabilitation programme is provided below.

Stratford Coal Mine Waste Emplacement

Rehabilitation works of the SCM waste emplacement have been effectively completed (Figure 4). The SCM waste emplacement is constructed with an overall outer batter slope of 1 vertical (V):6 horizontal (H), while selected areas of the emplacement and low mine landforms are contoured to a 1V:4H outer batter slope. Following the development of drainage structures, the waste rock has been covered with 150 millimetres (mm) to 200 mm of topsoil cover. Following topsoil placement, site preparation works have involved either chisel ploughing or deep ripping along contour, depending on the vegetation type to be established.

The emplacement has been progressively revegetated with a pasture cover crop. Endemic woodland shrubs and trees have been planted on ridgelines and other selected areas with the objective of covering approximately 20% of the emplacement surface with native vegetation.

Co–disposal Area and Return Water Dam

The reject co-disposal area contains mixed fine and coarse rejects from the SCM CPP. Reclaiming operations to recover thermal coal from the co-disposal area will remove a large proportion of the placed material and leave a low mounded landform for final rehabilitation. Rehabilitation concepts for the co-disposal area (post recovery of thermal coal) and the return water dam include reshaping the remaining *in-situ* material/embankment to final grade, capping with a layer of coarse reject material and topsoiling to a depth of approximately 200 mm. Revegetation would be with pastures or selected woodland species.

Roseville Void

The Roseville void was a mined out open cut that was used for the co-disposal of mine rejects and for temporary water storage. Following the cessation of use of the void for reject placement in 2003, the remaining void was backfilled with mine waste rock from the approved Roseville Pit Extension (to an elevation of approximately 140 m relative level [RL]). Co-disposed material was reshaped and capped with inert waste rock and clay. The surface was then topsoiled to a depth of approximately 200 mm and is being revegetated with native woodland and pastures.

Roseville Pit Extension Final Void

The Roseville Pit Extension final void will be backfilled with waste rock from the Roseville West Pit to approximately 122 m RL at natural ground level in the south and 116 m RL in the north (i.e. level with the flood/noise bund). Once the void is backfilled, the surface would be topsoiled to a depth of approximately 200 mm and revegetated with native woodland and pastures.

Roseville West Pit Final Void

The Roseville West Pit final void will be backfilled with waste rock from one of the other satellite pits that are proposed for future development (subject to future approvals), or in a manner agreed by the DPI. Once the void is backfilled, the surface would be topsoiled to a depth of approximately 200 mm and revegetated with native woodland and pastures.

SCM Main Pit Final Void

The SCM Main Pit final void is approximately 120 m in depth and currently used for water management and CPP reject disposal. Rehabilitation concepts for the final void include redirecting upstream drainage that is currently diverted around mine landforms, and runoff from the waste emplacement landform, into the void.

In accordance with Condition 4.8 of Schedule 2 of the SCM consent (Attachment 1), a Final Void Management Plan will be prepared in 2009 in consultation with the DPI and Department of Natural Resources (now DWE), and to the satisfaction of the DoP.

Stratford East Dam

The Stratford East Dam would most likely be retained after mine closure and final use options would be the subject of consultation. It is anticipated that the dam would provide a significant water resource (e.g. farm dam) post-mining. One rehabilitation option would include the diversion of waters flowing from the dam spillway into the SCM Main Pit final void.

Infrastructure Areas

SCM infrastructure including the SCM CPP area, buildings and electricity lines would be removed and the sites deep-ripped and seeded as required. Some concrete hardstands, site access roads and water management structures may be retained for alternate post mining uses.

2.6 ENVIRONMENTAL MONITORING AND MANAGEMENT

GCL's Environmental Policy principles are (GCL, 2008a):

- *To enhance the development and maintenance of high standards of environmental management.*
- *A commitment to the Environmental Management program by all personnel.*
- *Environmental performance shall be regularly assessed and information distributed to the local community through the consultative committees.*
- *Minimisation of areas disturbed by operations.*
- *Minimisation of impact on the surrounding environment.*
- *Application of best practical technologies for rehabilitation, water and environmental protection.*
- *The preservation of fauna and flora.*
- *The preservation of downstream water quality.*
- *The achievement of final land forms that are stable and sustainable.*

GCL's Energy Management Policy principles are (GCL, 2008b):

- *To enhance the development and maintenance of high standards of energy management.*
- *A commitment to the Energy Management program by all personnel.*
- *Energy usage performance shall be regularly assessed and a commitment of continuous improvement.*
- *Application of best practical technologies for the mining and production of the Company's products in the most economic and energy efficient manner.*
- *A goal of reducing the amount of energy per tonne of coal processed, resulting in lower production costs and reduced energy and demands on Electricity Providers, thereby reducing the impact on the environment and green house gas generation.*

SCPL's Environmental Management Strategy has the following objectives (SCPL, 2002a):

- *To ensure compliance with statutory requirements and with reasonable community expectations.*
- *To develop and maintain the most cost effective environmental management for the Stratford Mine.*
- *To provide all employees with the knowledge, skills and equipment necessary to meet their environmental obligations.*
- *To promote an awareness and concern for good environmental management amongst all employees.*
- *To provide a "feed-back loop" so that the results of environmental monitoring are used to assess, and where necessary improve, environmental performance.*

Environmental management at SCM and BRNOC has included the development and implementation of a range of environmental management plans, procedures and environmental monitoring programmes. As the BRNOC consent requires the integration of a number of environmental management aspects of SCM and BRNOC, the SCM operates under relevant BRNOC management plans where practicable (for example the BRNOC *Soil Stripping Management Plan* [SSMP] [SCPL, 2002b] is applied to general SCM operations).

Examples of relevant SCM and BRNOC environmental management plans, procedures and monitoring programmes include:

- RWP MOP (SCPL, 2007a);
- SCM *Air Quality Monitoring Program* (AQMP) (SCPL, 2007b);
- BRNOC *Land Management Plan* (LMP) (SCPL, 2001b);
- BRNOC *Flora and Fauna Management Plan* (FFMP) (SCPL, 2002c);
- BRNOC *Erosion and Sediment Control Plan* (ESCMP) (SCPL, 2002d);
- *Noise Consent and Management Plan* (NMP) (SCPL, 2006b);
- BRNOC *Lighting Management Plan* (LMP) (SCPL, 2002e);
- SSMP (SCPL, 2002b);
- BRNOC *Site Water Management Plan* (SWMP) (SCPL, 2002f);
- BRNOC *Landscape and Revegetation Management Plan* (LRMP) (SCPL, 2001c); and
- monitoring results provided annually in AEMRs, where relevant.

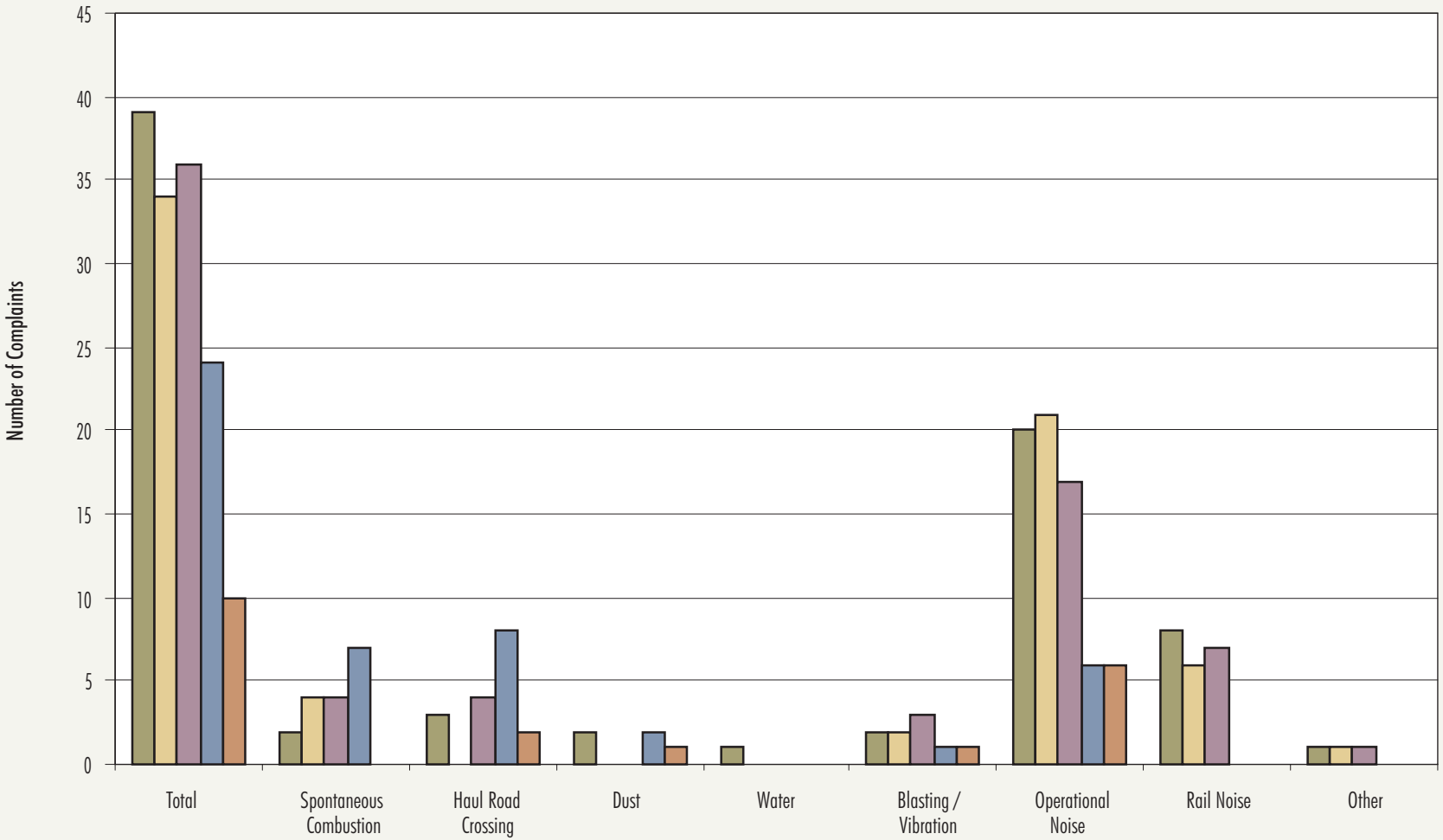
2.7 COMPLAINTS RECORD

A summary of the SCPL complaints record from January 2003 to December 2007 is provided on Figure 6. Note these complaints relate to both the SCM and the BRNOC, and are based on calendar years to include complaints received up to the end of 2007.

As shown on Figure 6, the number of complaints in 2007 (10 complaints) fell sharply in comparison to the previous years (24 complaints in 2006; 36 complaints in 2005).

As shown on Figure 6, the majority of complaints in the calendar years 2003 to 2005 were about operational noise and rail noise. However, in 2006, the number of noise related complaints fell sharply, with the highest number of complaints in this period being related to the haul road crossing and spontaneous combustion events that occurred in the SCM Main Pit. In 2007 there were only 10 complaints recorded for the two operations. Operational noise complaints have fallen significantly from a high of 21 complaints in 2004 to six complaints in 2007. No rail noise complaints were received in 2006 or 2007. In addition, in 2008 seven complaints have been recorded, including two relating to off-site rail noise, one relating to rail noise, one relating to operational noise, one relating to noise from off-site exploration activities, one relating to blasting and vibration, and one relating to lighting at the Bowens Road crossing.

Due to the proximity of a small number of private residences to the rail loop and SCM CPP, SCPL has implemented a range of noise mitigation measures to improve noise performance and address noise complaints from the community. These measures are described in Appendix A.



Source: SCPL (2008)

COAL HANDLING MODIFICATION

FIGURE 6

BRNOC and SCM Complaints Record
January 2003 - December 2007

STRATFORD COAL

GCL-07-08 CHM May08_003B

2.8 WORKFORCE

The combined workforce of the BRNOC and SCM operations (SCPL staff and contractors) is currently approximately 80 people.

2.9 INTERACTION WITH APPROVED OPERATIONS

The operation of BRNOC and SCM is integrated from an operational and environmental management perspective. Some of the consent conditions for the SCM (Attachment 1) require integration of environmental management and monitoring with BRNOC. While the two operations are effectively integrated, BRNOC continues to operate under a separate consent and EPL.

Where practicable, environmental management and monitoring of the two operations is integrated, as from an environmental management and community relations perspective the two mines are generally regarded as a single operation.

The Coal Handling Modification is wholly within the CPP operational and water management area, and therefore would be integrated into the existing CPP operations and relevant environmental management and monitoring.

3 DESCRIPTION OF THE PROPOSED COAL HANDLING MODIFICATION

3.1 CONSTRUCTION

The Coal Handling Modification at the SCM comprises modification to the (Figures 4 and 5):

- ROM stockpile area including a small additional ROM coal conveyor and second ROM coal stacker, for improved separation of DCM thermal and coking coals on the ROM pad; and
- product coal stockpile area, including an additional (smaller) product coal stockpile and associated product coal conveyors and coal reclaim systems.

A construction period in the order of nine months would involve the construction/installation of:

- a fixed ROM stacker and associated ROM stockpile on the existing ROM pad for increased separation of thermal and coking ROM coal delivered by train from the DCM;
- a fixed tripper on the existing ROM conveyor to allow material delivered by train to be diverted to the new ROM stacker;
- a new (smaller) product stockpile adjacent and to the south of the existing product stockpile to allow for better separation of product coals;
- an elevated single conveyor with a travelling tripper at the proposed product stockpile, to allow placement of product coal along the length of the proposed product stockpile without the need for dozer pushing; and
- a reclaim system beneath the proposed product stockpile, comprising of four vibrating stockpile activators and coal valves (as per the existing product reclaim system) and a new reclaim conveyor within a tunnel beneath the stockpile, which delivers product coal to the existing product conveyor for transfer into the existing train loading bin.

The earthworks and construction required for the Coal Handling Modification would be undertaken by a minor mobile plant fleet listed in Table 4, intermittently over a period in the order of nine months (daytime only).

Table 4
Coal Handling Modification Construction Mobile Fleet

No. of Items	Fleet Item
1	30 t Excavator
3	Volvo Haul Trucks (Articulated)
1	Water Cart
1	CAT D6 dozer
1	50 t Crane
1	Concrete Pump

3.2 MINING

No changes to the approved mining operations at SCM are proposed for the Coal Handling Modification (including no increase to ROM coal or product coal production rates).

3.3 COAL TRANSPORT

No changes to the approved number of coal trains or hours of loading are proposed for the Coal Handling Modification, as no increase in the rate of saleable coal production is proposed.

The larger product coal storage capacity associated with the additional stockpile allows for the option of larger capacity export trains and potentially reduced train movements on the Stratford rail loop. Should SCPL wish to utilise the larger capacity export trains, any relevant approvals would be obtained.

3.4 SURFACE WATER MANAGEMENT

No significant changes to the surface water management at the SCM are proposed in support of the Coal Handling Modification, and site water management would continue to be conducted in accordance with the SWMP.

The Coal Handling Modification is wholly within the current SCM CPP area (as bounded by the rail unloading conveyors – Figure 5) and within the existing CPP water management area. Notwithstanding, the following realignments/improvements would be constructed as part of the Coal Handling Modification:

- new drains around the proposed additional product stockpile, merging with the existing drains;
- a new drain around the proposed product coal conveyor; and
- realignment and associated drainage management of access tracks around the proposed product and ROM stockpiles and associated conveyors.

All water from within the SCM CPP area (including the areas subject to the Coal Handling Modification) would continue to be retained in the operational water management system. A water resources review of the Coal Handling Modification is provided in Section 4.5.

3.5 SUPPORTING INFRASTRUCTURE

No significant supporting infrastructure would be required for the Coal Handling Modification other than that described above. The existing 11 kV electricity supply to the SCM has the capacity to supply the minor increase in electricity demand as a result of the additional infrastructure. A component of the Coal Handling Modification construction works would involve one section of the existing SCM overhead powerlines in the CPP area being replaced with an underground cable.

3.6 WORKFORCE

A civil contractor would be engaged to construct the Coal Handling Modification, over a period of approximately nine months. The civil contractor would employ up to 20 additional people (average of 10 to 12) during this time.

No changes to the SCM operational workforce would be required for the Coal Handling Modification.

4 ENVIRONMENTAL REVIEW

4.1 LAND RESOURCES

4.1.1 Landuse

SCPL owns the land within the BRNOC and SCM Mining Leases and a significant area of buffer lands (Figures 3A and 3B). The land subject to the Coal Handling Modification (approximately 1 hectare [ha]) is situated wholly within the existing SCM CPP operational area (Figures 4 and 5), and therefore this area is excluded from agricultural use.

SCPL is a major landholder in the Stratford area (Figures 3A and 3B) and manages the majority of its landholdings for agricultural production. The Coal Handling Modification would have no material affect on landuse in the Stratford area.

4.1.2 Soils

The Coal Handling Modification is located within the existing CPP operational area. In accordance with existing management practices, where soil resources are suitable for stripping and use in rehabilitation, soils would be stripped and directly placed on areas where progressive rehabilitation is being undertaken, or stockpiled for later use.

A portion of a noise bund constructed for the SCM and partially rehabilitated by SCPL would be removed as part of the Coal Handling Modification. Where practicable, soils rehandled from the noise bund would be stockpiled or direct placed on rehabilitation areas.

The existing erosion and sediment control measures would be extended to the Coal Handling Modification. The Coal Handling Modification would not significantly increase the potential impacts of the SCM on soil resources. Soil management would continue to be conducted in accordance with the SWMP and SSMP.

4.1.3 Landforms

The landforms of the Gloucester valley are characterised by north-south oriented linear ridges with intervening undulating lowlands and floodplains. The ridges rise up to 600 m Australian Height Datum (AHD), are moderately to steeply sloping and remain timbered, while the undulating lowlands generally range from 50 to 150 m AHD in elevation and are characterised by gentle slopes and generally cleared land.

The Coal Handling Modification area is located in the eastern Gloucester valley, within the boundaries of the SCM and within the existing SCM CPP area (Figures 2 and 5). A number of components of the SCM and BRNOC contribute to local topography including:

- the SCM and BRNOC waste emplacements;
- the SCM Main Pit void;
- the BRNOC and Roseville Pit Extension operations;
- the backfilled Roseville pit;
- the SCM co-disposal area and return water dam; and
- various water management structures and storages.

These structures are shown at approved full development on Figure 2.

The Coal Handling Modification would not result in any permanent changes to the local topography. The removal of a section of the existing noise bund is described in Sections 4.1.2 and 4.1.4.

4.1.4 Visual Aspects

Background

The Vale of Gloucester is listed as a landscape conservation area by the National Trust and an indicative historic place under the Register of the National Estate, because of scenic and historical values. The scenic values of the area primarily relate to the lowlands being cleared while the surrounding volcanic ridges remain timbered and provide a picturesque backdrop to landuses within the valley. The Register of National Estate is a government register maintained by the Australian Heritage Council and the Vale of Gloucester listing relevantly states that:

> *Development should not detract form the essentially rural nature of the area, and be harmoniously sited in respect to the more outstanding features of the landscape.*

The visual character in the immediate vicinity of the Coal Handling Modification area is a combination of cleared grazing lands and the mine landforms associated with the SCM and BRNOC. The mine landforms (e.g. the rehabilitated SCM waste emplacement which is some 55 m high at approximately 180 m AHD) and BRNOC waste emplacement are visible from The Bucketts Way and a number of other public vantage points to the south, north and west. Disjunct patches of remnant vegetation occur along creek lines, road verges and as isolated remnants within the gently undulating topography. Vegetation cover is heavier and almost continuous along the ridgeline that delineates the valley to the east of the SCM.

The SCM CPP is visible from the south and south-east of the SCM from public vantage points including The Bucketts Way and a limited number of dwellings in the local area. A review of public and private vantage points in 2008 indicated these vantage points have only partial views of the CPP and associated conveyors, rail load out bin and stockpiles due to intervening vegetation, topography and visual screening. Partial views of the product coal conveyors are available from the Smith residence (Plate 1) and Standen residence (Plate 2) to the south-west of the SCM, and also from The Bucketts Way north of Craven and to south west of the CPP (Plate 3). The SCM is visible from the Wadland residence (Plate 4) and Clarke machinery shed to the east of the SCM, however the CPP is on the far side of existing SCM landforms when viewed from these locations (Figure 2).

Additionally, the night-time character of the SCM area is influenced by the light emissions of the existing SCM CPP and evening mining operations (in the Roseville pits).

Environmental Review

The potential visual impacts of the Coal Handling Modification would be limited given that the new conveyors and stockpiles:

- would be within the current SCM CPP operational area as bounded by the rail unloading conveyors;
- would be very similar in height, topographical orientation, construction and colouring to the existing conveyors and coal stockpiles; and
- would only extend the existing product coal stockpile area by approximately 100 m (i.e. remaining in the existing CPP operational area, as bounded by the rail unloading conveyors).

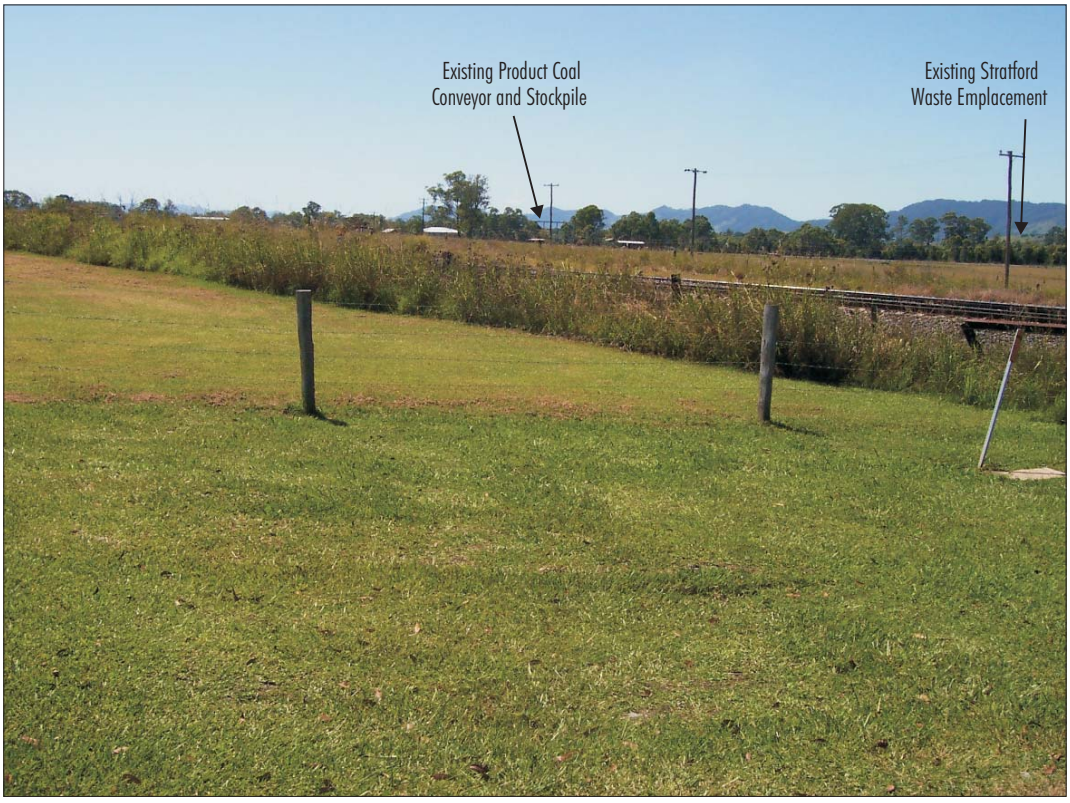


Plate 1: Existing View of SCM from Smith Residence (refer to Figure 3A)

Plate 2: Existing View of SCM from Standen Residence (refer to Figure 3A)

COAL HANDLING MODIFICATION

PLATES 1 & 2
Visual Amenity from
Private Residences

STRATFORD COAL

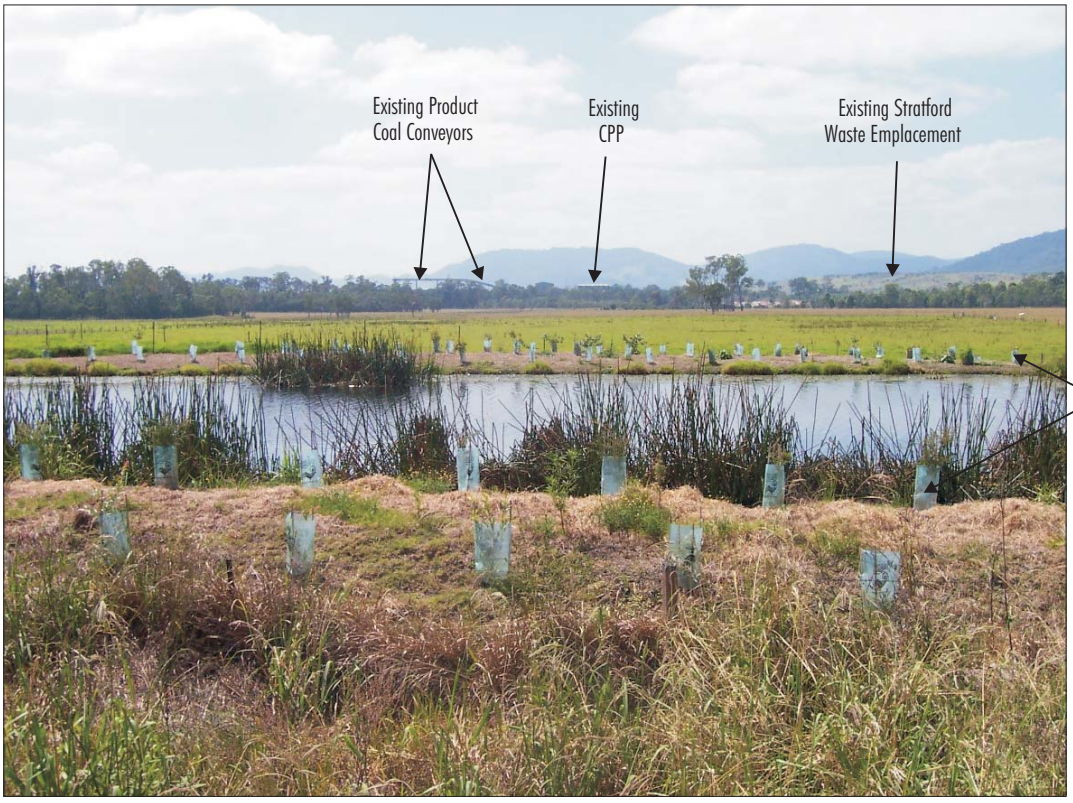


Plate 3: Existing View of SCM from The Bucketts Way (approximately 800 m south of the Rail Loop) (refer to Figure 2)

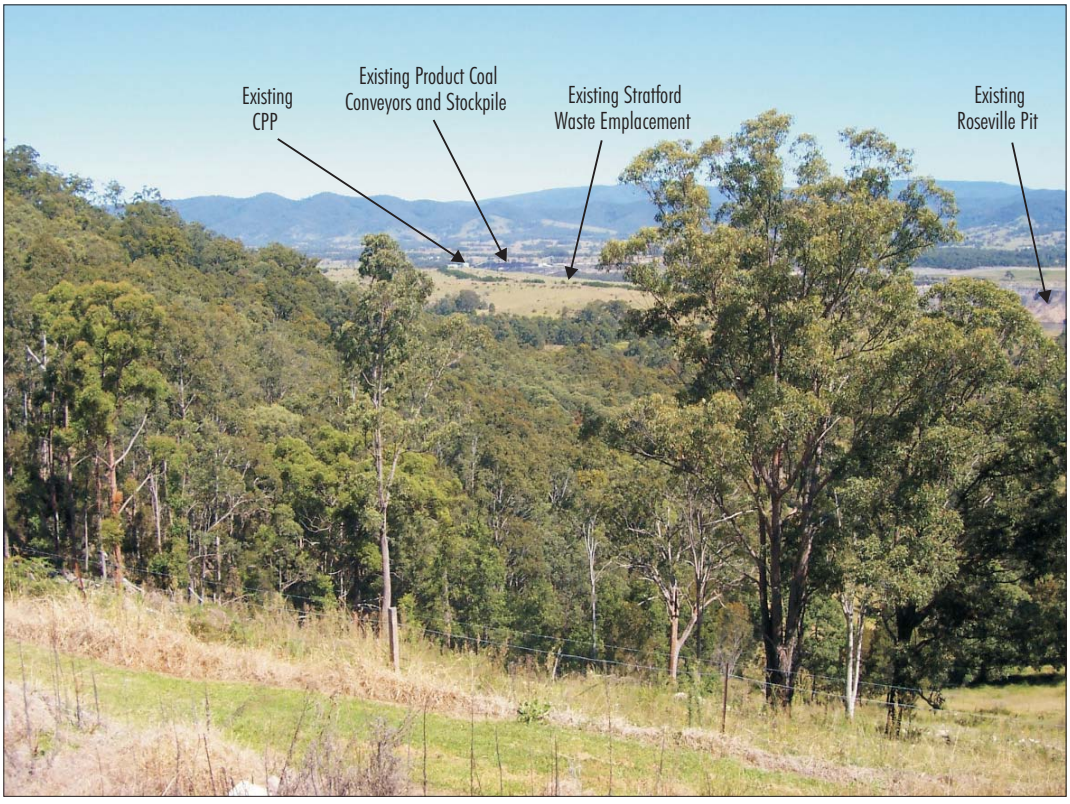


Plate 4: Existing View of SCM from Wadland Residence (refer to Figure 3A)

COAL HANDLING MODIFICATION

PLATES 3 & 4
Visual Amenity from a Public Road
and a Private Residence

STRATFORD COAL

The new product stockpile and associated conveyors would be marginally closer to private receptors to the south-west (e.g. Standen and Smith residences), however, from these locations, the additional infrastructure would appear very similar to the existing views of the conveyors and stockpiles due to the intervening distance and effective duplication of the same orientation and height of the infrastructure. Similar effects are anticipated at locations where views are available on The Bucketts Way.

At residences with views of the SCM from the east (as described above), only very limited alterations to the existing views are anticipated due to the distance (approximately 4 km), and the CPP being on the far side of the existing SCM major landforms.

At a limited number of locations to the south and southwest (e.g. portions of The Bucketts Way – Plate 3) the visibility of the lower portions of the existing stockpiles and CPP infrastructure is partially obscured by the existing vegetated visual/noise bund located to the south of the existing product stockpile. The removal of a portion of this bund may increase views of the lower portion of the new product stockpile. However, as shown on Figure 3A, SCPL owns a significant area of lands to the south of the CPP and the potential impacts of this change are therefore limited.

Given the small scale of the Coal Handling Modification and its location within the existing SCM landforms and CPP operational area, no impacts on the rural nature or the general features of the Vale of Gloucester are anticipated.

No significant additional direct or indirect lighting impacts are anticipated as a result of the Coal Handling Modification, given the additional lighting on the new sections of conveyor and stockpiles would be within the existing CPP operational area and of the same elevation of existing CPP conveyors, and would only marginally increase the overall lighting of the SCM CPP area.

Mitigation Measures

Management plans of relevance to the Coal Handling Modification are the LRMP and LMP (SCPL, 2002e).

The LRMP provides landscaping strategies that would be implemented where relevant to reduce the visual impacts of the SCM. Strategies relevant to the Coal Handling Modification include on-site and off-site vegetation screening, including planting adjacent to local roads. Vegetation screening of the SCM from The Bucketts Way has commenced (Plate 3).

As discussed above, no significant additional indirect lighting impacts are anticipated as a result of the Coal Handling Modification. Additional lighting of the new sections of conveyors would be minimised as much as practicable from a safety perspective. In addition, the LMP (SCPL, 2002e) provides measures to reduce potential lighting impacts that would be implemented where relevant to the lighting of the proposed infrastructure associated with the Coal Handling Modification, including:

- lighting of operational areas would be served by directional lighting only (i.e. oriented to a specific working area);
- lighting would be screened (i.e. shielded) where necessary to limit spillage to adjacent residences and to eliminate driver glare along local roads; and
- any lighting related complaints would be addressed.

In the event that a landholder advises that the Coal Handling Modification has significantly altered the existing SCM night-lighting environment at their residence, SCPL would consult with the landholder to examine whether additional shielding of lights at their source, or site specific mitigation measures at the residence may be practicably applied.

4.2 NOISE

The Coal Handling Modification would not involve any alteration to the existing SCM mining operations, ROM or product coal volumes or approved train movements. Therefore, no changes to off-site train noise, blasting or operational traffic noise are expected. No significant traffic impacts have been identified for the construction of the Coal Handling Modification (Section 4.8).

The following discussion therefore focuses on the potential operational noise impacts of the Coal Handling Modification (i.e. variation in CPP area noise and potential cumulative impacts with the SCM and BRNOC mining operations). Daytime construction noise while the Coal Handling Modification is developed (i.e. earthworks, concreting and erection of conveyors etc.) has also been assessed.

Background

The noise emissions of the original SCM were assessed in the SCP EIS by Richard Heggie Associates (1994). The assessment was conducted in accordance with the requirements of the Environmental Noise Control Manual (EPA, 1994).

As a component of the BRN EIS, Richard Heggie Associates (2001) completed an assessment of the cumulative intrusive SCM and BRNOC daytime noise emissions.

As a component of the Roseville Pit Extension environmental assessment, Heggies Australia (2005) conducted the *Stratford Coal Mine Operating Noise Impact Assessment* in accordance with the requirements of the NSW INP (EPA, 2000). The 2005 assessment included a number of iterations to examine additional reasonable and feasible noise controls to minimise identified night-time noise impacts associated with the operation of the CPP.

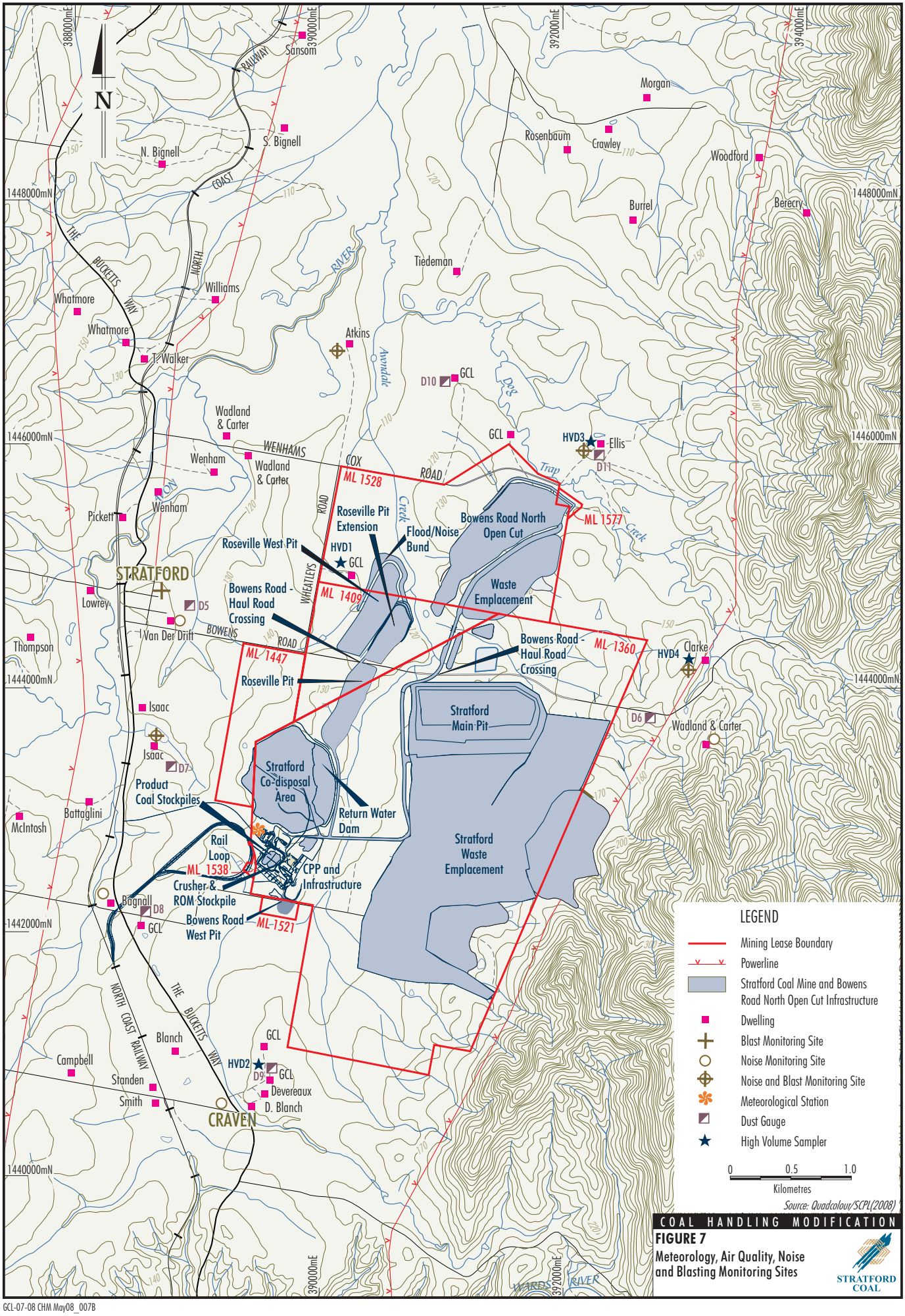
As a component of the Roseville West Pit environmental assessment, Heggies Australia (2006) completed the *Stratford Coal Mine Roseville West Pit Modification Operating Noise and Blasting Impact Assessment* in accordance with the requirements of the NSW INP (EPA, 2000). The 2006 assessment included predictive daytime and evening noise emissions from the cumulative SCM, Roseville Pit Extension and BRNOC operations over two key phases of the Roseville West Pit development. These comprised:

- Stage 1 – primary waste stripping to expose the coal seams; and
- Stage 2 – coaling and partings removal using smaller earthmoving fleet.

Operational Noise Performance

Noise monitoring is undertaken at locations surrounding the BRNOC and SCM developments (Figure 7). A review of SCM/BRNOC routine noise monitoring results by Heggies Pty Ltd (2008) (Appendix A) indicated:

- December 2006 and June 2007 quarterly noise surveys identified compliance with applicable limits during the daytime, evening and night-time period's at the evaluated locations.
- Some marginal (1 dBA to 2 dBA) exceedances of the relevant noise criteria at (90b) Bagnall, Craven village and (49) Issac (south) were identified during the September 2006 and/or March 2007 surveys.
- Routine noise monitoring conducted in September 2007 confirmed noise compliance was achieved during the daytime, evening and night-time period's at all eight monitoring locations.



COAL HANDLING MODIFICATION

FIGURE 7

Meteorology, Air Quality, Noise and Blasting Monitoring Sites

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GCL-07-08 CHM May08_007B

- Routine noise monitoring conducted in December 2007 confirmed noise compliance was achieved during the daytime, evening and night-time period's at all eight monitoring locations, except at (49) Issac (south) and Van der Drift (Wood St, Stratford) where marginal (1 dBA) exceedances were recorded during the evening.
- Two detailed noise investigations conducted in response to resident concerns at (84) Lowrey (Vipac, 2007a) and Healy (off Glen Rd, Craven) (Vipac, 2007b). Evening and night-time noise compliance was reported at the Healy property and only marginal (1 dBA) exceedances of the evening and night-time criteria were recorded at (84) Lowrey.

SCM/BRNOC operational noise complaints have fallen significantly over the last few years. In calendar year 2007, there were six operational noise complaints recorded for SCM and BRNOC combined, falling from 21 complaints relating to operational noise received in calendar year 2004. No on-site rail noise complaints were received in calendar years 2006 or 2007 (Section 2.7). To date in 2008, one operational noise complaint has been received (Section 2.7).

Environmental Review

An operational noise assessment compliant with the INP (EPA, 2000) has been completed by Heggies Pty Ltd (Appendix A). This assessment included revision of the earlier noise model to include additional private residences and to reflect the changes proposed for the Coal Handling Modification.

The potential for machinery to emit noise is quantified as the sound power level (SWL). A comparative assessment of the overall SCM mine site L_{eq} SWL for the mine fleet and on-site fixed equipment described in the SCM Alterations SEE, Roseville West Pit modification and SCM Coal Handling Modification are provided below (Appendix A):

- SCM (DA 23-98/99) - SWL 136 dBA.
- SCM with Roseville Pit Extension - SWL 130 dBA.
- SCM with Roseville West Pit - SWL 130 dBA.
- SCM with Coal Handling Modification SWL 130 dBA.

The comparison demonstrates that the SWL of the SCM incorporating the Coal Handling Modification is very similar to the SCM with the Roseville West Pit as previously modelled in 2006. In addition, the comparison demonstrates the significant reduction in the SWL of the SCM, when compared to the Project as approved in 1999.

Noise modelling was conducted for both construction of the Coal Handling Modification in parallel with the existing approved SCM and BRNOC operations (i.e. construction co-incident with initial development of the approved SCM Roseville West Pit) and for operation of the Coal Handling Modification (co-incident with more advanced mining operations at the approved SCM Roseville West Pit).

Key findings of the operational noise assessment for SCM, incorporating the Coal Handling Modification include (Appendix A):

- *With the implementation of the noise mitigation measures proposed by SCPL it is concluded that from a noise perspective, the modification is minor in nature and would not require any alteration to the existing consented SCM noise limits during its operation.*
- *An allowance for slightly elevated (daytime only) noise at the Bagnall residence during construction would be required, however, the predicted daytime construction noise remains well below the existing approved night-time operational SCM noise limits at this resident location.*

Predicted night-time noise contours (SCM incorporating the Coal Handling Modification) for adverse inversion and inversion plus drainage meteorological conditions are shown on Figures 8 and 9.

With respect to the proposed removal of the current visual/noise bund to the south of the existing product coal stockpile, Heggies concluded (Appendix A):

- *The new* [product] *stockpile would retain a minimum RL 137 (even when empty) and the effective height of the existing bund would not be compromised. With a 3 m height increase to the remaining section of noise bund to the south of the CPP, there is no need to build a new noise bund to the south of the new stockpile to maintain noise emissions at currently approved limits to the south of the CPP.*

Mitigation Measures

As described in Appendix A, SCPL have already implemented a range of physical and operational noise mitigation measures to reduce noise emissions from the SCM and BRNOC operations.

In addition, SCPL would implement a number of noise management measures that are relevant to the Coal Handling Modification, including (Appendix A):

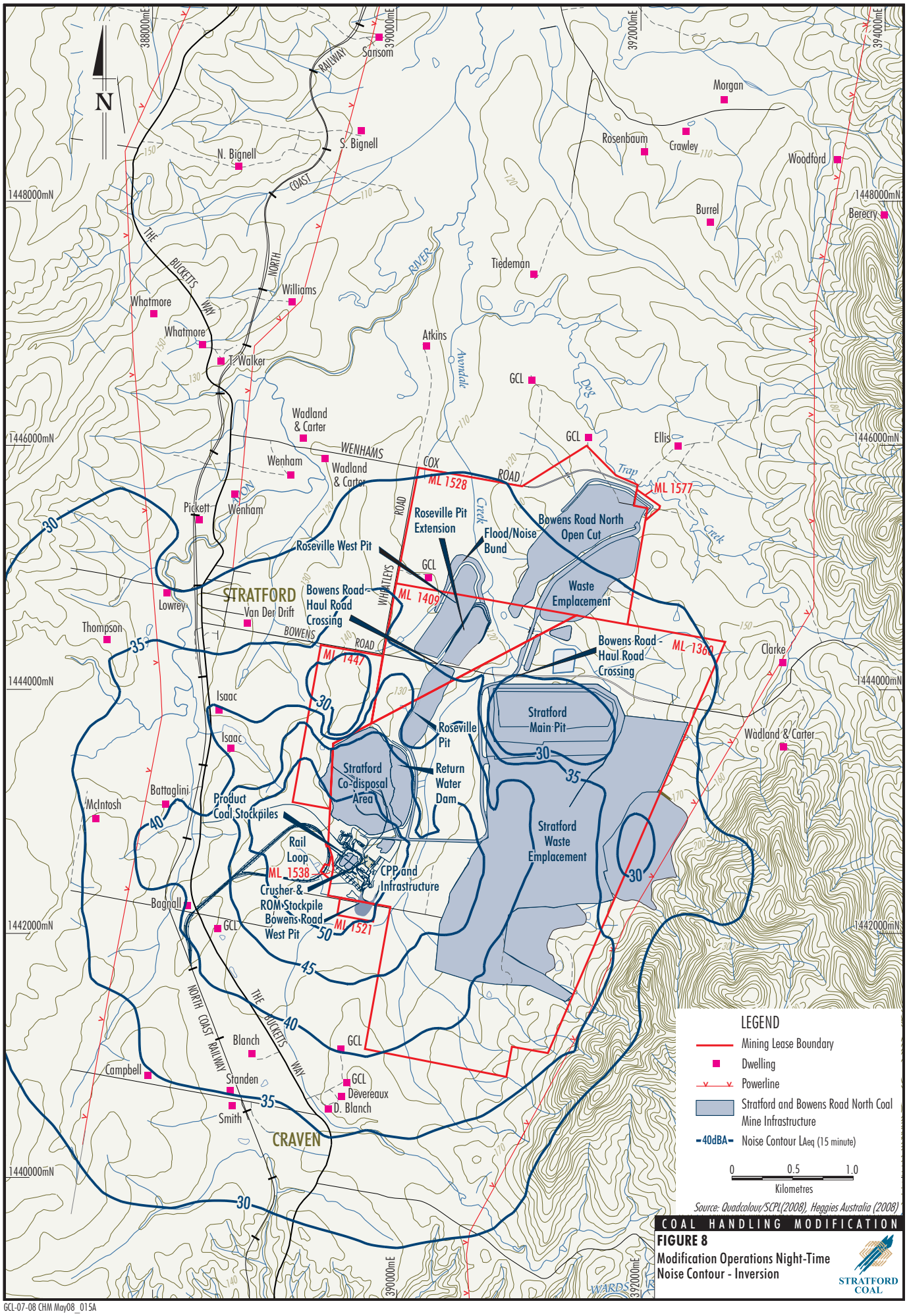
- the remaining southern length of the visual/noise bund wall adjacent to the CPP would be increased in height by approximately 3 m to RL 140;
- the existing coal stockpile dozer would be replaced with a quieter CAT D10 Dozer (or equivalent); and
- new conveyors and drives for the new product stockpile and ROM conveyor/stacker would be consistent with current low noise conveyor system technology, procured and commissioned in accordance with acoustic design specification.

SCPL manages its SCM mining operations in accordance with the requirements of the NMP (SCPL, 2006b).

The NMP describes measures to manage noise emissions from the SCM operation, including:

- proactive/predictive and reactive mitigation measures to limit noise emissions;
- long term strategies to address exceedances of applicable noise levels at private residences;
- complaints handling and on-site responsibilities; and
- quarterly noise monitoring and equipment plant noise surveys.

These noise management and mitigation measures would continue to be applied at the operation, including the Coal Handling Modification. The SCPL noise monitoring programme would be continued, with results reported in the AEMR.



COAL HANDLING MODIFICATION

FIGURE 8

Modification Operations Night-Time Noise Contour - Inversion

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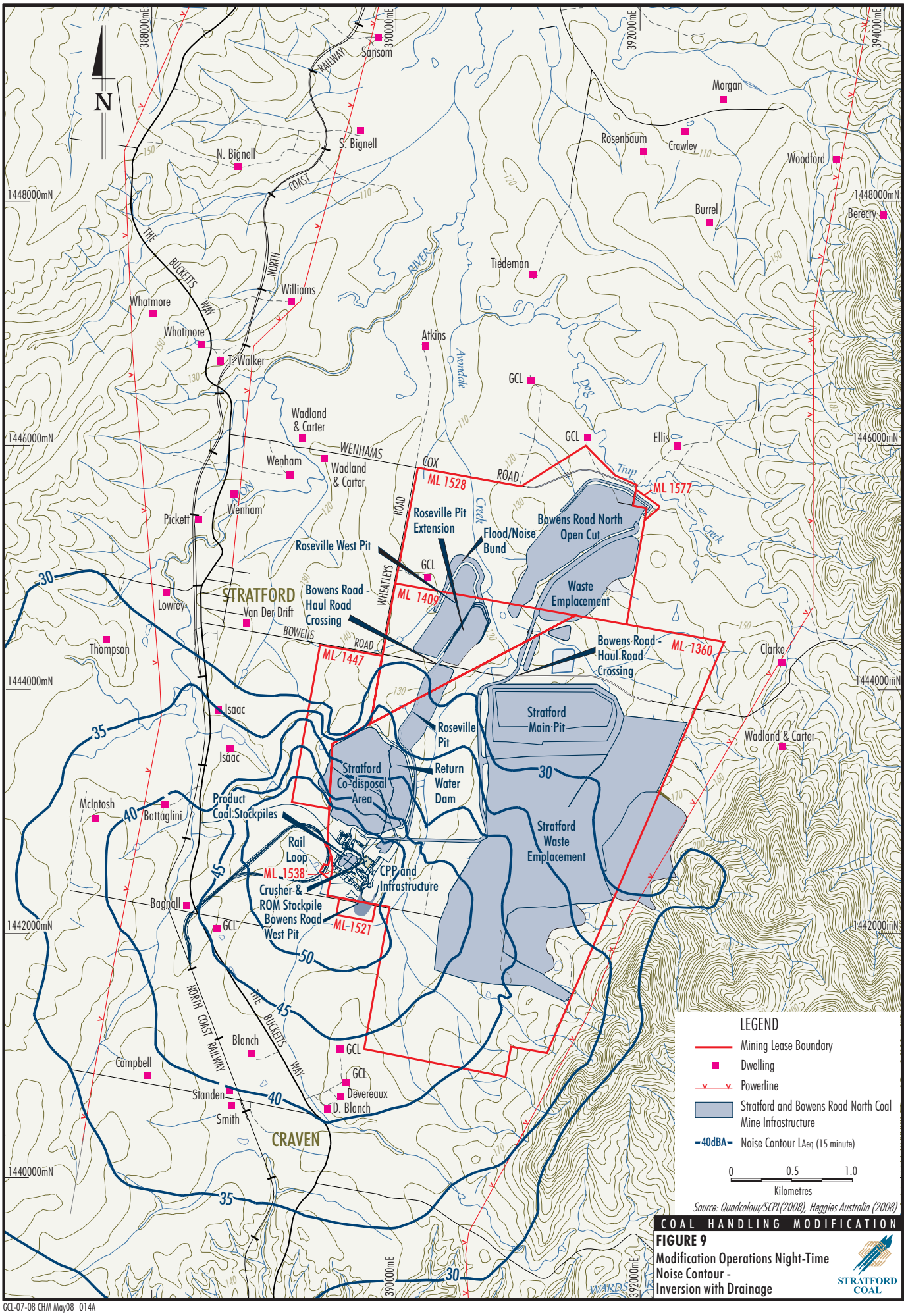


COAL HANDLING MODIFICATION

FIGURE 9

Modification Operations Night-Time Noise Contour - Inversion with Drainage

STRATFORD COAL

GCL-07-08 CHM May08_014A

The existing Development Consent (Attachment 1) provides a mechanism for landholders (outside of the existing acquisition zone) to request an independent investigation of noise levels at their residence. If an exceedance is demonstrated by such an investigation, the Development Consent provides a mechanism for acquisition of the property, if a noise management solution or negotiated agreement cannot be reached and subsequent monitoring indicates the exceedance is continuing. This process is also outlined in the NMP.

4.3 AIR QUALITY

Background

Cumulative air quality modelling conducted for the BRN EIS (Holmes Air Sciences, 2001) indicated that with the implementation of appropriate dust control measures, the SCPL mining operations incorporating the BRNOC would comply with applicable air quality criteria at the nearest private residences.

A review of the potential air quality impacts of the Roseville West Pit modification indicated that the modification would not significantly increase the levels of particulate matter generated by the SCM when measured at surrounding compliance locations (Holmes Air Sciences, 2006).

SCPL maintains seven dust gauges and four high volume particulate matter less than 10 microns in size (PM_{10}) air samplers. The locations of these monitoring sites are shown on Figure 7.

Recent air quality monitoring results indicate that, as predicted by the BRN EIS cumulative air quality modelling and the Roseville West Pit Air Quality Assessment (Holmes Air Sciences, 2006), the SCPL mining operations are easily complying with applicable air quality criteria (dust deposition and suspended particulates) at the nearest private residences.

Table 5 provides a summary of applicable dust monitoring data.

Table 5
SCM and BRNOC Average Dust Deposition
Monitoring Results 2001-2007

Year	Annual average dust deposition (g/m^2/month)							DECC Criteria
	D5	D6	D7	D8	D9	D10	D11	
2001	0.5	0.6	0.8[1]	3.2	1.0	3.7	-	4
2002	1.2	1.1	0.7	2.5	1.8	3.0	-	4
2003	1.0	0.7	1.2	1.2	1.8	-[1]	1.1	4
2004	0.5	0.6	0.5	1.0	1.2	1.4[1]	1.1	4
2005	0.7	0.6	1.4	0.8	0.8	0.6	1.0	4
2006	0.5	0.6	1.1	0.6	0.6	0.5	1.2	4
2007	0.4	0.5	1.1	0.8	0.4	0.5	1.0	4

[1] Excluding results contaminated by bird droppings, insects and plant material.
g/m^2/month = grams per square metre per month

With the exception of years when samples from particular gauges were heavily contaminated by bird droppings or insect/plant material, average annual monthly dust deposition rates at the SCM monitoring points are generally below 2 g/m^2/month.

A measurement of the 24-hour average PM_{10} concentration is made every sixth day at four locations. Table 6 provides PM_{10} concentration data from May 2001 to December 2007. The DECC assessment criteria for 24-hour average PM_{10} concentrations is 50 micrograms per cubic metre ($\mu g/m^3$). This is numerically equivalent to the National Environmental Protection Measure (NEPM) 24-hour average PM_{10} standard.

A small number of exceedances of the NEPM 24 hour 50 $\mu g/m^3$ PM_{10} criteria were observed in the period July 2001 to June 2006, however, these exceedances were generally related to agricultural activities, fires or regional dust storm events, not SCPL mining operations. A more detailed description of dust and particulate concentration monitoring results is provided in Appendix B.

Table 6
SCM and BRNOC Average PM_{10} Monitoring Results 2001-2007 ($\mu g/m^3$)

Year	Monitoring Site			
	Stratford	Craven	Ellis	Clarke
2001	7.3	9.3	-	-
2002	11.6	14.6	-	-
2003	11.6	12.2	14.6	12.3
2004	10.6	10.6	13.2	9.9
2005	13.0	10.7	15.4	8.8
2006	8.4	8.4	12.1	6.1
2007	10.3	10.7	15.3	8.9

In the last five years of complaint records (January 2003 to May 2008), only five dust-related complaints have been received by SCPL (Figure 6) for the SCM and BRNOC operations.

Environmental Review

The Coal Handling Modification would not involve any changes the approved SCM or BRNOC mining operations or coal processing rates (i.e. coal handling and CPP production would not change).

The Coal Handling Modification may result in a potential increase in dust emissions from the increase in exposed stockpile surfaces due to the expanded stockpile areas. There would be no increase in dust emissions from material handling since the quantity of material handled at SCM would not change. There would also be some potential for dust emissions during the construction of the Coal Handling Modification due to wheel generated dust, wind erosion and surface shaping activities if not adequately controlled.

A review of the potential air quality impacts of the Coal Handling Modification has been completed by Holmes Air Sciences (Appendix B). Holmes Air Sciences (2008) concluded:

> *In terms of dust emissions the proposed modifications are minor in scale and it is concluded that there would not be any significant increase the cumulative air quality emissions of SCM and BRNOC.*
>
> *A review of recent monitoring data indicates that the SCM operations are complying with applicable air quality assessment criteria and compliance with these air quality criteria would be expected under the proposed modifications.*

Mitigation Measures

Dust control measures employed at the SCM are detailed below.

Dust suppression water sprays operate at a number of locations in the CPP including the:

- ROM coal bin;
- crusher station;
- stamler feeder/breaker; and
- product coal stockpile.

A total of six product coal stockpile sprays are located on the overhead conveyor system. A wind speed/direction device provides information to a computer located in the CPP control room that can automatically activate sprays. Automated sprays on the product stockpiles are activated once wind speed (measured on the gantry) exceeds 5 metres per second. Automated sprays at the ROM bin, crusher station and stamler feeder/breaker are activated when more than 50 tph of material is on the conveyor belts. SCPL would apply the same dust suppression measures (e.g. water sprays etc) to the new stockpiles and conveyors.

Dust generated by dozer pushing at the stockpiles would also potentially be reduced due to improved coal separation and a travelling tripper on the product stockpile (i.e. dozer operations at the CPP would be reduced).

General relevant air quality management procedures used during mining operations include (SCPL, 2007c):

- regular watering of in-service haul roads in dry weather;
- generally restricting open areas that have the potential for dust generation;
- regular maintenance of hauls roads; and
- prompt rehabilitation of disturbed ground.

The dust control measures and management practices described above and outlined in the AQMP (SCPL, 2007b) would also be applied to the Coal Handling Modification, where applicable.

4.4 HERITAGE

4.4.1 Aboriginal Heritage

Background

The SCM area falls within the south-west section of the Birpai (or Biripi) Aboriginal people's traditional land (Tindale, 1974). The name 'Biripi' is broadly accepted by Elders and other representatives of the Aboriginal communities at Purfleet, Taree, Forster and Karuah as referring to the Aboriginal occupants of the Manning valley and the land north of Gloucester. The primary Aboriginal organisation that is responsible for providing advice about the management of Aboriginal heritage in the SCM area is the Forster Local Aboriginal Land Council (LALC).

A large area of land extending from Craven in the south to Dog Trap Creek in the north was surveyed prior to the development of the SCP EIS with surveys in November 1981, March 1982 and October 1984 and (Brayshaw, 1984). Further survey was then carried out for the SCM development area in 1994 as part of the SCP EIS. Five sites consisting of an open camp site, an open scatter site (four artefacts) and three isolated finds were located. None of these sites are located in close proximity to the SCM CPP.

In addition, a heritage survey of the BRNOC area was conducted by Heritage Search (2000). This survey only located one isolated artefact (in the central BRNOC area). Heritage Search also classified the majority of the BRNOC area as having low potential for the presence of subsurface archaeological material and test excavation was not recommended. The Forster LALC concurred with the Heritage Search assessment and advised that monitoring of topsoil stripping in the BRNOC development area was not necessary (Heritage Search, 2000).

An area to the north of the BRNOC along Dog Trap Creek was identified as having some potential for the presence of sub-surface artefacts, due to its topographical location. This area is well outside of the Coal Handling Modification area.

As a component of the archaeological assessment for the BRN EIS, a search of the Aboriginal Heritage Information System was conducted within a 20 km radius of the BRNOC area. Six Aboriginal sites had previously been recorded in the search area. The only site of relevance was an open camp site which had been recorded during the previous surveys for the SCM (Brayshaw, 1984). The remaining five listed sites were located well away from the SCPL mining operations.

Environmental Review

The Coal Handling Modification area is wholly within the existing SCM CPP operational area, and within the area previously surveyed for the SCP EIS. Previous surveys of both the SCM and BRNOC areas have identified minimal evidence of previous Aboriginal occupation and no sites have been identified in the Coal Handling Modification area by the previous surveys. In addition, previous surveys and assessments and advice from the Forster LALC have not identified a requirement for further excavation testwork or on-site monitoring of topsoil stripping activities.

Mitigation Measures

Should any Aboriginal objects be uncovered during construction of the Coal Handling Modification, works in the immediate area of the find would cease and the DECC would be advised as required by the SCM Development Consent Schedule 2, Condition 3.2 (Attachment 1).

4.4.2 Non-Aboriginal Heritage

Background

The following discussion on European history is summarised from the SCP EIS.

European settlement in the Stroud/Gloucester district commenced in the late 1920s as a component of the expansion of the Australian Agricultural Company (A. A. Co.) which ran sheep and cropping operations over a land grant area of 1,000 acres north from Port Stephens. By 1832 the township of Stroud was well developed and by 1850 was the centre of the A.A. Co. operations.

Whilst the A.A. Co. subsequently moved its sheep running operations elsewhere, the area continued to develop with the major industries being beef cattle, dairies and the milling of softwood and hardwood timbers.

The GSC and Stroud Shire Council (subsequently Great Lakes Shire) were established in 1906. The rapid development of coastal towns after the establishment of the Pacific Highway in 1952 and a lack of development within the area largely resulted in the preservation of the historical character of the townships of Gloucester and Stroud.

Early mining activity commenced in the 1850s, when a survey of the A.A. Co. holdings was undertaken and coal deposits were identified on Mammy Johnsons River between Stroud and Stratford. Sporadic commercial gold mining was also undertaken on the upper Karuah River from 1900 to 1931.

Surveys conducted during the preparation of the SCP EIS concluded:

> *There are no European heritage items located within the Project Area or adjacent. The closest items are located in Gloucester township, 15 km to the north of the Project Area.*

A non-Aboriginal heritage survey of the BRNOC area was undertaken in 2000 for the BRN EIS. No sites or artefacts of European heritage significance were identified. In addition, a search of the Register of the National Estate and State Heritage Inventory to determine if there are any ruins, cemeteries, archaeological deposits or structures found that no sites were recorded within the BRNOC area (Heritage Search, 2000).

Environmental Review

The Coal Handling Modification area is wholly within the existing SCM CPP operational area, and within the area previously surveyed for the SCP EIS. There are no known non-Aboriginal heritage sites within the SCM CPP area. The Coal Handling Modification is therefore anticipated to have no impact on Non-Aboriginal heritage values.

4.5 WATER RESOURCES

Comprehensive assessments of the potential surface and groundwater impacts of SCM were conducted for the SCP EIS and SCM Alterations SEE. These assessments described the operational water management procedures for the life of the mine, assessed potential water quality impacts, examined drainage controls and management of CPP rejects and excess water.

Water management at the SCM CPP is undertaken in accordance with the SWMP which incorporates the following components:

- site water balance;
- erosion and sediment control;
- surface water monitoring programme; and
- groundwater monitoring programme.

As the proposed Modification does not involve mining, the following discussion is limited to surface water resources only. The SCM and BRNOC groundwater extraction and monitoring is described in the AEMR.

4.5.1 Surface Water Resources

Background

The SCM and BRNOC are located approximately 3 km south-east of the Avon River. The Avon River has a catchment area of some 290 square kilometres (km^2) and is one of approximately 30 tributary rivers contributing to the greater Manning River system. The Manning River system drains some 8,000 km^2 and extends from the Great Dividing Range to the sea near Taree.

Local hydrology comprises a number of drainage lines and creeks flowing west and north-west towards the Avon River. Avondale Creek is a tributary of Dog Trap Creek and drains the SCM area, joining Dog Trap Creek approximately 1 km north of the BRNOC (Figure 2).

As the drainage lines within the SCM area have small catchments, they typically exhibit low to zero flow for extended periods during dry weather, while heavy rainfall events result in short duration, high flow events. Groundwater seepage provides minor contributions to flows in Dog Trap Creek and Avondale Creek during periods of elevated groundwater levels that follow extended rainfall events.

Surface water quality and flow monitoring in the vicinity of the SCM and BRNOC is described in the AEMR (SCPL, 2007c).

Environmental Review

Given the Coal Handling Modification is located wholly within the existing CPP operational and water management area, potential surface water impacts would be limited. Water management of the Coal Handling Modification would be in accordance with the SWMP. Minor additional water management infrastructure and earthworks would direct runoff around the additional stockpiles and conveyors to the Bowens Road West Pit void, as per the current water management system. The existing site water management system therefore requires no significant alterations for the Coal Handling Modification.

Due to the additional area of the new stockpiles and the additional dust control sprays that would be installed, it is anticipated that water demand for dust suppression may increase slightly as a result of the Coal Handling Modification. The magnitude of the additional demand would, however, have no material effect on the SCM site water balance.

Mitigation Measures

The existing SCM erosion and sediment controls would be applied to the Coal Handling Modification in accordance with the SWMP and ESCMP. Water management would continue to be reported in the AEMR (Section 5.2).

4.6 FLORA AND FAUNA

Background

Flora and fauna assessments were undertaken over the CPP area for the SCP EIS. The SCP EIS states:

> *The flora shows relatively low diversity and lack of structural variation. … The vegetation associations present on the Project Area are well represented elsewhere in the Gloucester Valley. The Project Area is typical of the highly modified ecosystem of the rural agricultural areas which support a relatively diverse avian fauna and a rather less diverse population of ground dwelling species.*

Environmental Review

The land subject to the Coal Handling Modification is wholly within the current CPP operational disturbance area. A portion of a noise bund constructed for the SCM and partially rehabilitated by SCPL would be removed as part of the Coal Handling Modification.

Given the area subject to the Coal Handling Modification lies within the current operational area of the existing CPP, no significant potential impacts to flora or fauna are expected from the Coal Handling Modification. Notwithstanding, SCPL would implement the Coal Handling Modification consistently with the RWP *Compensatory Habitat Plan*, and BRNOC LRMP, LMP, SSMP, and FFMP.

4.7 HAZARD AND RISK

All hazardous materials at the SCM are stored and used in accordance with the relevant material safety data sheets (MSDS). The MSDS register is updated when new materials or chemicals are brought to site. The mine contractor is responsible for the Dangerous Goods Licence for the Fuel Farm and Explosives Magazine.

Environmental Review

The Coal Handling Modification would involve no increase in the average annual production of ROM or product coal, or waste rock at the SCM site. The fuel, explosive and chemical storage facilities on-site would not require any modification and all materials would continue to be stored and used in accordance with the relevant MSDSs.

The Coal Handling Modification and associated additional stockpiles and conveyors would not significantly alter the risk profile of the SCM. The existing management and mitigation measures at SCM would be applied to the Coal Handling Modification where required to minimise the hazards and risks associated with the development.

Where required, environmental management would be updated to address the Coal Handling Modification (Section 5.2.2).

4.8 TRANSPORT

Background

Stratford is located approximately 40 km west of the Pacific Highway (Figure 1), the main coastal arterial road linking Brisbane and Sydney. The Bucketts Way comprises the principal road servicing the SCM/BRNOC area and runs approximately 40 km west from Nabiac on the Pacific Highway to Gloucester and then south to rejoin the Pacific Highway approximately 8 km south of Karuah (Figures 1 and 2).

The local minor road network in the SCM area comprises a grid of unsealed roads, running approximately east-west and north-south. The local minor road network primarily provides property access for local landholders and generally does not carry through traffic.

Bowens Road has been diverted to the north of the Main Pit, and connects to Bucketts Way at Stratford village and runs some 6 km to the ridgeline in the east (Figure 2). Two haul road crossings of Bowens Road are currently in place and serve the BRNOC operation (haulage of coal only), Roseville Pit Extension (haulage of coal and waste rock) and Roseville West Pit (haulage of coal only). Eighteen complaints from local landholders have been received since January 2003 about the condition of the BRNOC and Roseville Pit Extension haul road crossings, including poor visibility and mud during wet weather.

SCPL has recently obtained approval from GSC to relocate Bowens Road to the north of the mining operations to remove the need for haul trucks to cross this public road, and accordingly these crossings would no longer be required once the Bowens Road relocation is established.

The approved workforce for the SCM is up to 110 people. The current workforce at the SCM and BRNOC is approximately 80 people.

Environmental Review

No change to the general transport requirements of the SCM are proposed for the Coal Handling Modification. The mining rate, ROM coal production rate and the saleable coal production rate would remain unchanged and heavy deliveries are therefore not expected to vary.

In addition, the light traffic associated with operational workforce movements to and from the mine would remain unchanged.

The development of the Coal Handling Modification would involve some minor increases in deliveries and construction workforce movements (up to 20 people at peak) during the approximate nine month construction period. Up to approximately 10 additional truck movements per day during the concreting period (approximately three months) may be expected, with a total of approximately 500 truck movements over the nine month construction period.

At peak the construction of the Coal Handling Modification may therefore contribute up to 40 light vehicle movements and 20 heavy vehicle movements per day on the SCM access road and The Bucketts Way. While these construction movements would be measureable, it is unlikely that they would be outside existing seasonal and daily variations in traffic movements on these routes.

Additionally, the approved SCM workforce is up to 110 people. Currently the SCM and BRNOC operations employ some 80 people. This is substantially less than the approved workforce, due to completion of the SCM main pit. The SCM and BRNOC workforce, combined with the additional 20 people (at peak) required for the construction of the Coal Handling Modification would be less than the approved workforce of up to 110 people.

4.9 SOCIAL AND ECONOMIC ASPECTS

The Coal Handling Modification would allow for improved handling and separation of thermal and coking coal and provision of additional coal stockpile capacity. This would allow the SCM to increase thermal coal stockpiles on-site to address coal capacity limitations and delays through the Port of Newcastle and reduce cross-product contamination which affects coal quality and prices.

The SCM and BRNOC operations currently employ some 80 people. A civil contractor would be engaged to construct the Coal Handling Modification, over a period of approximately nine months. An additional 10 to 12 jobs would be created during the construction of the Coal Handling Modification (i.e. over a period of approximately nine months), up to a maximum of approximately 20 people at peak.

Community liaison during the development of Coal Handling Modification would continue to be provided by the quarterly CCC meetings. The 24 hour complaints number would continue to operate to provide the local community with a method to register issues or complaints with respect to SCPL mining activities.

Local landholders have in the past expressed concerns that mining modifications could affect property values. However, assessment of the potential environmental impacts of the Coal Handling Modification has indicated that the modified development would remain substantially the same as the approved SCM and the SCM operations would not be closer to private receptors. All of the proposed modifications are within the existing CPP operational area.

5 REHABILITATION, ENVIRONMENTAL MONITORING AND MANAGEMENT

5.1 REHABILITATION

The rehabilitation of the Coal Handling Modification would be integrated with SCM rehabilitation programme. The SCM rehabilitation objectives and management procedures are provided in Sections 2.5 and 2.6.

Rehabilitation of infrastructure areas within the SCM and BRNOC (including the CPP area) would involve removal of all infrastructure (e.g. buildings, conveyors, other CPP infrastructure) and the site would be deep-ripped and seeded as required. Some concrete hardstands, site access roads and water management structures may be retained for alternate post mining uses.

The Coal Handling Modification is situated within the existing CPP operational area and therefore no alteration to the SCM rehabilitation programme is required.

Figure 10 provides the provisional post-mining SCM and BRNOC revegetation plan.

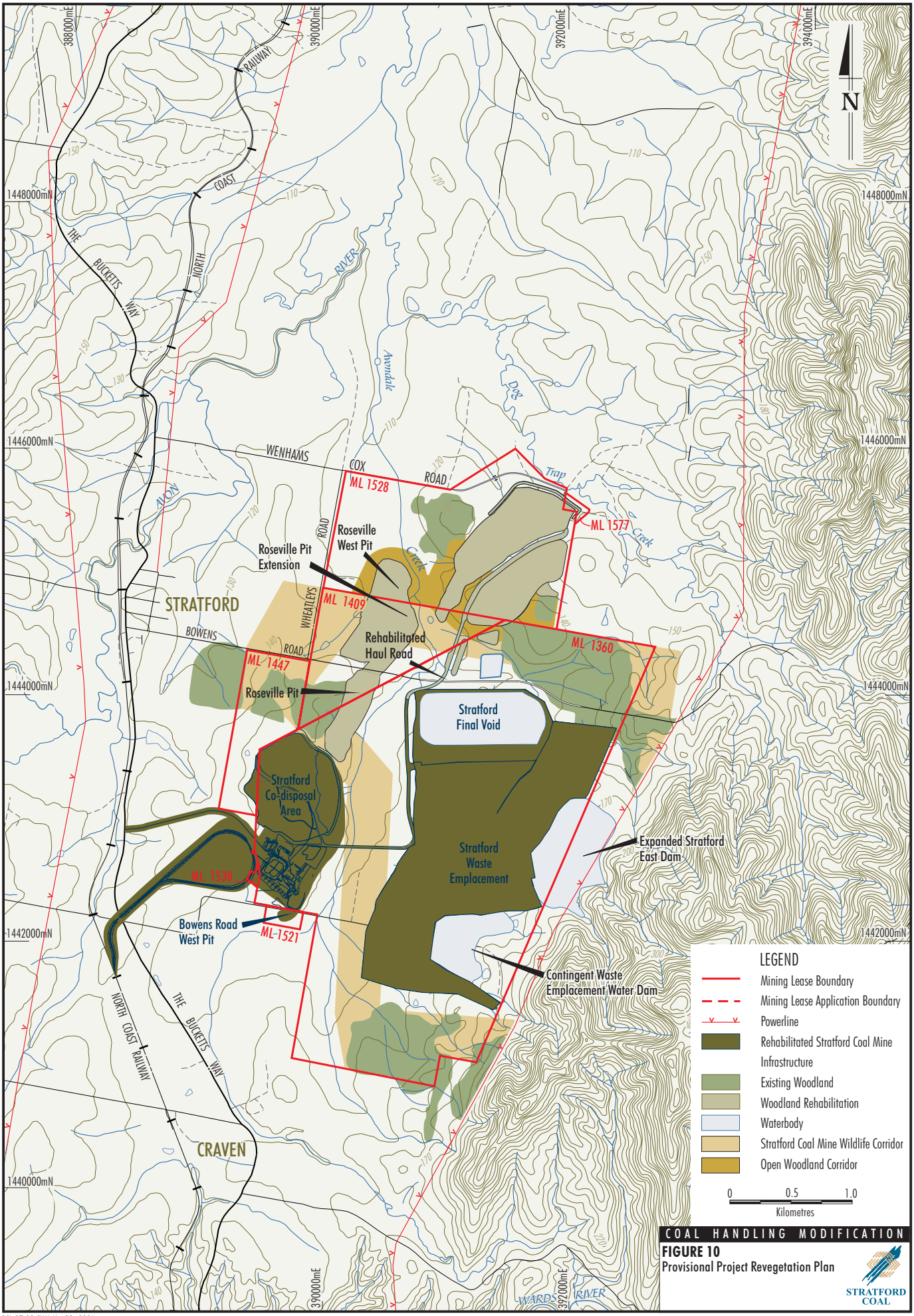
5.2 ENVIRONMENTAL MONITORING AND MANAGEMENT

5.2.1 Environmental Monitoring

The SCPL monitoring programme includes monitoring sites and monitoring frequencies for all major environmental parameters. The Coal Handling Modification is wholly within the CPP operational area and therefore the existing SCPL monitoring programme already covers all issues or requirements relevant to the Coal Handling Modification.

5.2.2 Environmental Management

Existing environmental management plans that would be updated to address the Coal Handling Modification would include the MOP. The Coal Handling Modification would be within the requirements of the existing SWMP, ESCMP, AQMP and NMP. Environmental monitoring and management of SCM operations would continue to be reported in the AEMR.



COAL HANDLING MODIFICATION

FIGURE 10

Provisional Project Revegetation Plan

STRATFORD COAL

GCL-07-08 CHM May08_009A

6 CONCLUSION

SCPL has lodged an application with DoP to modify the SCM Development Consent. The Coal Handling Modification comprises minor changes to the SCM CPP (Figure 5), *viz*.:

- Modification to the ROM stockpile area, including a small additional ROM coal conveyor and second ROM coal stacker, for improved separation of DCM thermal and coking coals on the ROM pad.
- Modification to the product coal stockpile area, including an additional (smaller) product coal stockpile and associated product coal conveyors and coal reclaim systems.

Environmental reviews that have been conducted to evaluate the proposal have concluded:

- From a noise perspective the Coal Handling Modification is minor in nature, and cumulative operational noise of the Coal Handling Modification (with the existing operations) would comply with relevant existing noise criteria at all nearby dwellings. Cumulative daytime construction noise would comply at all dwellings except for one nearby residence (Bagnall) where the predicted construction noise levels would marginally exceed the existing daytime criteria.
- The potential air quality emissions of the SCM with the Coal Handling Modification are expected to continue to comply with applicable dust deposition and suspended particulate criteria at the nearest private receptors.
- Potential visual impacts associated with the Coal Handling Modification would be limited given that the new conveyors and stockpiles are within the current SCM CPP operational area, and would be very similar in height, topographical orientation, construction and colouring to the existing conveyors and coal stockpiles, and would extend the existing product coal stockpile area by approximately 100 m (i.e. remaining in the existing CPP operational area, as bounded by the rail unloading conveyors).
- No change to the operational transport requirements of the SCM are proposed.
- The Coal Handling Modification is situated wholly within the existing SCM CPP operational area, and therefore no impacts to flora or fauna species, populations, ecological communities, or their habitats are anticipated.
- The Coal Handling Modification is situated wholly within the existing SCM CPP water management area, and therefore potential impacts to surface water quality and quantity, including erosion and sediment control, would be limited.
- With the continued implementation of the existing environmental management measures and monitoring programmes, no significant additional effects on residents or existing environmental values are expected to result from the Coal Handling Modification.

The environmental reviews conducted for this SEE indicate that the SCM incorporating the Coal Handling Modification is of minimal environmental impact, and when compared to the SCM (DA 23-98/99), would be substantially the same development. Therefore modification via Section 96(1A) or Section 96(2) of the EP&A Act is justified.

7 REFERENCES

Brayshaw, H.C., (1984) *The Hunter Valley and its Aboriginal Inhabitants: An Ethnohistorical Study.* Report to Anutech Pty Ltd.

Duralie Coal Pty Ltd (1996) *Duralie Coal Environmental Impact Statement*, *Volume 1*. Report prepared by Woodward-Clyde.

Duralie Coal Pty Ltd (1998) *Proposed Alterations to Duralie Coal Project Statement of Environmental Effects.* Report prepared by Resource Strategies, Brisbane.

Environment Protection Authority (1994) *Environmental Noise Control Manual*. New South Wales.

Environment Protection Authority (2000) *NSW Industrial Noise Policy*. New South Wales.

Gloucester Coal Ltd (2008a) *Gloucester Coal Environmental Policy.*

Gloucester Coal Ltd (2008b) *Gloucester Coal Energy Management Policy.*

Heggies Australia (2005) *Stratford Coal Mine Operating Noise Impact Assessment*. Report prepared for Stratford Coal Pty Ltd.

Heggies Australia (2006) *Stratford Coal Mine Roseville West Pit Modification Operating Noise Impact Assessment.* Report prepared for Stratford Coal Pty Ltd.

Heritage Search (2000) *Proposed Bowens Road North Project Stratford, NSW: Assessment of Aboriginal and Non-Aboriginal Heritage*. Report prepared for Stratford Coal Pty Ltd.

Holmes Air Sciences (2001) *Air Quality Assessment: Bowens Road North Project - Stratford Coal Mine, Stratford, NSW*. Report prepared for Stratford Coal Pty Ltd.

Holmes Air Sciences (2006) *Air Quality Assessment: Roseville West Pit Modification*. Report prepared for Stratford Coal Pty Ltd.

Holmes Air Sciences (2008) *Air Quality Impacts of Proposed Modifications to Coal Handling at Stratford Coal Mine.*

Richard Heggie Associates (1994) *Stratford Coal Project Noise and Blast Impact Assessment.* Appendix 5 in Stratford Coal Pty Ltd (1994) *Environmental Impact Study*. Report prepared by Woodward-Clyde.

Richard Heggie Associates Pty Ltd (1998) *Stratford Coal Mine Train Unloading Operations – Preliminary Noise Impact Assessment.* Report prepared for Stratford Coal Pty Ltd.

Richard Heggie Associates (2001) *Bowens Road North Project: Operating and Transportation Noise and Blasting Impact Assessment.* Report prepared for Stratford Coal Pty Ltd.

Stratford Coal Pty Ltd (1994) *Stratford Coal Project Environmental Impact Statement*. Report prepared by Woodward Clyde Pty Ltd.

Stratford Coal Pty Ltd (1996) *Proposal to Increase Saleable Coal Production to 1.7 Mtpa.*

Stratford Coal Pty Ltd (1998) *Proposed Modifications to Stratford Coal Mine Statement of Environmental Effects*. Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2000) *Stratford Coal Mine – Domestic Production Modification Statement of Environmental Effects*. Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2001a) *Bowens Road North Project Environmental Impact Statement.* Report prepared by Resource Strategies Pty Ltd.

Stratford Coal Pty Ltd (2001b) *Bowens Road North Open Cut Coal Mine Land Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2001c) *Bowens Road North Open Cut Coal Mine Landscape and Revegetation Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002a) *Bowens Road North Open Cut Coal Mine: Environmental Management Strategy*. Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002b) *Bowens Road North Open Cut Coal Mine: Soil Stripping Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002c) *Bowens Road North Open Cut Coal Mine: Flora and Fauna Management Plan*. Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002d) *Bowens Road North Open Cut Coal Mine: Erosion and Sediment Control Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002e) *Bowens Road North Open Cut Coal Mine: Lighting Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2002f) *Bowens Road North Open Cut Coal Mine: Site Water Management Plan.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2003) *Stratford Coal Mine Modification Statement of Environmental Effects.* Report prepared by Resource Strategies.

Stratford Coal Pty Ltd (2006a) *Stratford Coal Mine Roseville West Pit Modification Statement of Environmental Effects.*

Stratford Coal Pty Ltd (2006b) *Noise Management at Stratford Coal Mine - Noise Consent and Management Plan*. Report prepared by Vipac Engineers & Scientists.

Stratford Coal Pty Ltd (2007a) *Mining Operations Plan for Roseville West Open Cut as a satellite pit for the Stratford Coal Mine.*

Stratford Coal Pty Ltd (2007b) *Stratford Coal Mine: Air Quality Monitoring Program.*

Stratford Coal Pty Ltd (2007c) *Annual Environmental Report Stratford Coal Mine – June 2005.*

Tindale, N.B. (1974) *Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits, and Proper Names*. Australian National University Press, Canberra.

Vipac Engineers & Scientists Limited (2007a) *Independent Noise Investigations – Lowrey Residence.*

Vipac Engineers & Scientists Limited (2007b) *Independent Noise Investigations – Healy Residence.*

STATEMENT OF ENVIRONMENTAL EFFECTS

Stratford Coal Mine
Coal Handling Modification

ATTACHMENTS

ATTACHMENT 1

STRATFORD COAL MINE
DEVELOPMENT CONSENT CONDITIONS

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

INTEGRATED STATE SIGNIFICANT DEVELOPMENT

DETERMINATION OF DEVELOPMENT APPLICATION PURSUANT TO SECTIONS 76(A)9 & 80

I, the Minister for Urban Affairs and Planning, pursuant to Sections 76(A)9 & 80 of the Environmental Planning and Assessment Act, 1979 ("the Act) determine the development application ("the application") referred to in Schedule 1 by granting consent to the application subject to the conditions set out in Schedule 2.

The reasons for the imposition of the conditions are to:

(i) minimise the adverse impact the development may cause through water and air pollution, noise and visual disturbance;

(ii) provide for environmental monitoring and reporting; and

(iii) set requirements for infrastructure provision.

Craig Knowles
Minister for Urban Affairs and Planning

Sydney, 5. 2. 1999 File No. S98/01495

Schedule 1

Application made by:	Stratford Coal Pty Ltd (ACN 064 016 164) ("the Applicant").
To:	Gloucester Shire Council (DA 23-98/99)
In respect of:	Land described in Schedule "A"
For the following:	Construction of facilities for the unloading, loading, processing and washing of coal from the Duralie coal mine and emplacement of Duralie coal rejects within the Stratford mine site, and the continued operation of the Stratford coal mine ("the Development").
BCA Classification:	Class 10A (hoppers and conveyors)
NOTE:	1) To ascertain the date upon which the consent becomes effective, refer to section 83 of the Act. 2) To ascertain the date upon which the consent is liable to lapse, refer to section 95 of the Act. 3) Section 97 of the Act confers on an Applicant who is dissatisfied with the determination of a consent authority a right of appeal to the Land and Environment Court exercisable within 12 months after receipt of notice

SCHEDULE "A"

LAND TO BE DEVELOPED

Crown Grant Volume 13945 Folio 25 Lot 2 in DP 241780 Parish of Avon County of Gloucester

Block 70 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 108 Book 3445

Part Lot 69 Avon Subdivision Parish of Avon County of Gloucester - Registered No. 964 Book 3568

Lots 57, 58 and 59 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 458 Book 3569

Block 74 in Avon Subdivision Parish of Avon County of Gloucester - Registered No. 73 Book 3570

Lot 76 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 419 Book 3568

Lots 45, 56A, 56B and 56C of Avon Subdivision Parish of Avon County of Gloucester- Registered No. 420 Book 3568

Lot 41 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 418 Book 3568

Lot 1 in DP 241780 Volume 13784 Folio 164 Parish of Avon County of Gloucester

Part Lot 53 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 966 Book 3568

Lot 71 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 965 Book 3568

Lot 1 in DP531023 Certificate of Title Volume 15207 Folio 225 Parish of Avon County of Gloucester

Lots 54, 55, 56D, 56E, 72, 73 and 75 of Avon Subdivision Parish of Avon County of Gloucester - Registered No. 625 Book 3569

Lots 60 and 61 Parish of Avon County of Gloucester - Registered No. 208 book 3559

Part of Lots 52 and 53 of Avon Subdivision Parish of Avon County of Gloucester

1/194728 Lot 1 in DP 194827 Parish of Avon County of Gloucester

52/979859 Lot 52 in DP 979859 Parish of Avon County of Gloucester

Lot 64 in DP979859 Certificate of Title 64/979859 Parish of Avon County of Gloucester

Notice of Modification

Section 96(2) of the *Environmental Planning and Assessment Act 1979*

Under Section 96(2) of the *Environmental Planning and Assessment Act 1979*, I, the Acting Deputy Director-General, Office of Sustainable Assessments and Approvals, Department of Planning, modify the development consent referred to in Schedule 1, as set out in Schedule 2.

Yolande Stone
Acting Deputy Director-General
(as delegate for the Minister for Planning)

SIGNED YOLANDE STONE 18 JANUARY 2006

Sydney 2005

Red text represents Roseville West Pit Modification – 16 February 2007

SCHEDULE 1

The development consent (DA No. 23-98/99) for the Stratford coal mine, which was granted by the Minister for Urban Affairs and Planning on 5 February 1999.

SCHEDULE 2

1. Replace “Schedule 2” of the Minister’s consent with the following text.

SCHEDULE 2

DEFINITIONS

AEMR	Annual Environmental Management Report
Applicant	Stratford Coal Pty Limited
Council	Gloucester Shire Council
DA	Development Application
Day	Day is defined as the period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning
DEC	Department of Environment and Conservation
DNR	Department of Natural Resources
DPI	Department of Primary Industries
Director-General	Director-General of the Department of Infrastructure Planning & Natural Resources, or delegate
DST	Daylight Standard Time
EIS	Environmental Impact Statement
EST	Eastern Standard Time
Evening	Evening is defined as the period from 6pm to 10pm
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
Night	Night is defined as the period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays;
Privately-owned land	Land that is not owned by a public agency, a mining company or its subsidiary; or where relevant, land that is not covered by a private agreement between the Applicant and the land owner that specifically allows for variances to criteria for environmental performance in this consent.
Site	Land to which the DA applies
SEE	Statement of Environmental Effects

1. GENERAL

1.1 Obligation to Minimise Harm to the Environment

The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.

1.2 Terms of Approval

(a) The Applicant shall carry out the development generally in accordance with the:
- DA 23-98/99;
- EIS titled *Stratford Coal Project*, dated September 1994, and prepared by Peter Ryan and Chris Ellis;
- SEE titled *Proposal to Increase Saleable Coal Production to 1.7 Mtpa,* and associated documents, dated April 1996, and prepared by Stratford Coal Pty Limited;
- SEE titled *Proposed Modifications to the Stratford Coal Mine*, dated August 1998, and prepared by Resource Strategies Pty Ltd;
- SEE titled *Stratford Coal Mine Modification,* dated July 2003, and prepared by Resource Strategies Pty Ltd, including the *Stratford Coal Mine Operating Noise Impact Assessment*, dated August 2005, prepared by Heggies Australia Pty Ltd;
- SEE titled *Stratford Coal Mine Roseville West Pit Modification,* dated October 2006, and prepared by Resources Strategies Pty Ltd; and
- conditions of this consent.

(b) If there is any inconsistency between the above documents, the latter document shall prevail over the former to the extent of the inconsistency. However, the conditions of this consent shall prevail over all other documents to the extent of any inconsistency.

(c) The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
- any reports, plans or correspondence that are submitted in accordance with this consent; and
- the implementation of any actions or measures contained in these reports, plans or correspondence.

1.3 Period of Approval

In respect of the right to conduct coal mining operations, this consent is limited to a period of 17 years from the date of grant of the mining lease ML 1360 for the Stratford coal mine.

Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of the DPI and the consent will continue for this and related purposes.

1.4 Limits on Approval

(a) The Applicant shall not transport more than 2.3 million tones of coal a year from the Stratford coal mine (including coal from the Bowens Road North mining operations).

(b) The Applicant shall not carry out any development at the Roseville Pit (including the Roseville West Pit) to the north of Bowens Road at night.

1.5 Contributions to Council

The Applicant shall pay a community infrastructure contribution of $86,000 a year (payable quarterly and indexed to CPI Sydney [all groups] index from 1998) to the Council until the completion of mining activities.

2. MINE MANAGEMENT

2.1 Rejects from Duralie

The Applicant shall ensure that all rejects associated with the coal from the Duralie mine are managed to the satisfaction of the DPI.

2.3 Mining Operations, Waste Management and Rehabilitation

The Applicant shall:
- prepare a Mining Operations Plan for all mining operations on the site;
- dispose of coarse and fine rejects on the site; and
- rehabilitate the site,

to the satisfaction of the DPI.

3. LAND AND SITE ENVIRONMENTAL MANAGEMENT

3.1 Appointment of Environmental Officer

The Applicant shall appoint an Environmental Officer whose qualifications are acceptable to the DPI to oversee the environmental management, monitoring, auditing and reporting on the site.

3.2 Heritage Assessment and Management

The Applicant shall:
- protect Aboriginal artefact scatter No. 31.1.8;
- monitor topsoil removal; and if any Aboriginal objects are found or observed,
- immediately advise DEC and carry out any requirements DEC may have,

to the satisfaction of the DEC.

3.3 Flora and Fauna Assessment and Management

(a) The Applicant shall:
- implement the approved plan of management for the proposed Wildlife Corridor as proposed in the EIS (see condition 1.2);
- protect the remnant Squirrel Glider habitat ; and
- carry out flora and flora monitoring within the Wildlife Corridor,

to the satisfaction of the Director-General.

(b) The Applicant shall carry out a range of measures to improve the riparian vegetation in Avondale Creek to the north of the mine to the satisfaction of the Director-General to compensate for the removal of riparian vegetation associated with the extension of the Roseville Pit to the north of Bowens Road. By the end of April 2007, the Applicant shall prepare (and subsequently implement) a Compensatory Habitat Plan to the satisfaction of the Director-General. This plan must:
- describe the measures that would be implemented to improve the riparian vegetation in Avondale Creek; and
- describe how the performance of the measures would be monitored.

3.4 Visual Amenity & Landscaping

The Applicant shall:
- implement the approved Landscaping Plan for the site; and
- carry out any supplementary tree planting or visual enhancement works that are required by Council to maintain the visual amenity of the local area,

to the satisfaction of Council.

3.5 Bushfire and Other Fire Controls

The Applicant shall:
- provide adequate fire protection works on site, including one fully equipped fire fighting unit on stand-by (or alternative facilities specified by the Council); and
- undertake annual hazard reduction works in accordance with Council's Bushfire Management Plan,

to the satisfaction of Council.

4. WATER MANAGEMENT

4.1 Water Discharges

The Applicant shall only discharge water from the site in accordance with the provisions of a DEC Environment Protection Licence.

4.2 Site Water Balance

The Applicant shall:
- prepare a detailed site water balance for the development;
- measure:
  - water use on site; and
  - water transfers across the site;
- review the site water balance for the development annually; and

- report the results of this review in the AEMR,

to the satisfaction of the Director-General.

4.3 Erosion and Sediment Control

The Applicant shall implement a range of standard erosion and sediment controls on the site to the satisfaction of the Director-General, in general accordance with the requirements of the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual.

4.4 Surface Water Monitoring

The Applicant shall regularly monitor:

- the volume and quality of water discharged from the site;
- surface water quality upstream and downstream of the development in Avondale Swamp, Avondale Creek, Dogtrap Creek and the Avon River; and
- report the results of this monitoring in the AEMR,

to the satisfaction of the Director-General.

4.5 Ground Water Monitoring

The Applicant shall regularly monitor:

- the volume of ground water seeping into the open cut mine workings;
- regional groundwater levels and quality in the vicinity of the site; and
- report the results of this monitoring in the AEMR,

to the satisfaction of the Director-General.

4.6 Setback From Avondale Creek

The Applicant shall ensure that all the development associated with the Roseville Pit (including the Roseville West Pit) to the north of Bowens Road is located at least 40 metres from the bank of Avondale Creek, or as otherwise agreed by the Director-General.

4.7 Water Management Plan

By the end of May 2006, the Applicant shall prepare (and subsequently implement) a Water Management Plan for the Stratford coal mine, including the Bowens Road North operations, in consultation with the DNR, and to the satisfaction of the Director-General. This plan must include:

- a site water balance;
- an Erosion and Sediment Control Plan;
- a Surface Water Monitoring Program;
- a Ground Water Monitoring Program; and
- a Surface and Ground Water Response Plan, to address any potential adverse impacts associated with the development such as the reduction or loss of groundwater in bores in the vicinity of the mine.

4.8 Final Void Management Plan

By the end of September 2009, unless otherwise directed by the Director-General, the Applicant shall prepare (and subsequently implement) a Final Void Management Plan for the site, in consultation with the DPI and DNR, and to the satisfaction of the Director-General. This plan must:

- investigate options for the future use of the final void; and
- describe what actions and measures would be implemented to:
  - minimise any potential adverse impacts associated with the final void; and
  - manage and monitor the potential impacts of the final void over time.

5. AIR QUALITY, BLAST, NOISE AND LIGHT MANAGEMENT

5.1 Acquisition Upon Request

(a) Upon receiving a written request for acquisition from the landowner listed in Table 1, the Applicant shall acquire the land in accordance with the procedures in condition 6.3 of this consent.

90b - Bagnall	49 - Isaac (s)	68 - Devereaux
58 - Bramley	48 - Isaac (n)	90a - Battaglini
69 - D Blanch	93a - Blanch	24 - Ellis

Table 1: Land subject to acquisition upon request

Note: For more information on the numbering and identification of properties used in this consent, see Appendix 2.

(b) By the end of May 2006, the Applicant shall notify the owners of the land listed in Table 1 that they have voluntary acquisition rights.

5.2 Noise and Dust Limits in the Acquisition Zone

While the land listed in Table 1 is privately-owned, the Applicant shall ensure that the noise generated by the development does not exceed the noise limits in Table 2, and the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria in Tables 7, 8, and 9 at any residence on the land.

Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$	Land Number
41	41	47	58 – Bramley (deleted by Feb 07 Modification)
37	37	45	90b - Bagnall
37	36	43	93a - Blanch
37	36	42	48 – Isaac (north) 49 – Isaac (south) 68 – Devereaux 69 – D Blanch 90a – Battaglini 93a – Blanch (deleted by Feb 07 Modification)

Table 2: Noise limits for land in the acquisition zone

Notes:

- *If the Applicant has a written agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DEC, then the Applicant may exceed the noise limits in Table 2 or the air quality impact assessment criteria in Tables 7, 8, and 9 in accordance with the negotiated noise agreement.*
- *See notes in condition 5.3 for more detail on how to interpret these limits.*

5.3 Noise Limits

The Applicant shall ensure that the noise generated by the development does not exceed the noise limits set out in Table 3.

Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$	Land Number
37	35	40	Craven Village
37	35	40	93c – Standen 93 - Campbell
37	35	39	95 – Smith 89 - McIntosh
37	35	35	18 – Atkins 13 – Teidman 46 - Wadland
35	35	35	All other privately-owned land excluding the land in Table 1

Table3: Noise limits
Notes:

- *If the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 2, and a copy of this agreement has been forwarded to the Department and the DEC, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement.*

- *Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the $L_{Aeq(15\ minute)}$ noise limits in the above table.*
- *Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *Noise from the development is to be measured at 1 metre from the dwelling façade to determine compliance with the $L_{A1(1\ minute)}$ noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).(this note deleted by February 2007 Modification)*
- *The noise emission limits identified in the above table apply under meteorological conditions of:*
  - *Wind speeds of up to 3 m/s at 10 metres above ground level; or*
  - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

5.3A Roseville West Pit Noise Limits

During the commencement of the Roseville West Pit until mining operations are 10 metres below natural ground level, the Day noise limits applicable for:

- Stratford rural residences in Table 3 are increased by 2 dB(A);
- Stratford village residences in Table 3 are increased by 1 dB(A); and
- Issac (south) residence in Table 2 is increased by 1 dB(A).

5.4 Noise Acquisition Criteria

If the noise generated by the development exceeds the criteria in Table 4 at any privately-owned land, the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in condition 6.3 of this consent.

Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$	***Land***
42	*41*	*40*	Craven Village 93c – Standen 93 – Campbell 95 – Smith 89 – McIntosh 18 – Atkins 13 – Teidman 46 - Wadland
40	*41*	*40*	*All other privately-owned land excluding the land in Table 1*

Table 4: Land acquisition criteria dB(A)

Note: Noise generated by the development is to be measured in accordance with the notes presented below Table 3.

Additional Noise Mitigation Measures

5.5 Upon receiving a written request from:

- a landowner of the land listed in Table 1; or
- the owner of any residence where noise monitoring shows the noise generated by the development is greater than, or equal to, $L_{Aeq(15\ minute)}$ 38 dB(A) at night,

the Applicant shall implement additional noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

5.6 Noise Monitoring

By the end of May 2006, the Applicant shall prepare (and subsequently implement) a Noise Monitoring Program for the Stratford coal mine, including the Bowens Road North operations, to the satisfaction of the Director-General. This program shall include a noise monitoring protocol for evaluating compliance with the noise limits and acquisition criteria in this consent.

5.7 Noise - Continuous Improvement

The Applicant shall:

- investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance;
- investigate ways to transport as much coal as possible during the day and evening;
- implement all reasonable and feasible noise mitigation measures on the site; and
- report on these investigations and the implementation of any new noise mitigation measures on site in the AEMR,

to the satisfaction of the Director-General.

5.7 Airblast Overpressure Criteria

The Applicant shall ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 4 at any residence on privately owned land or noise sensitive location as defined in the DEC's *Industrial Noise Policy*.

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Table 5: Airblast overpressure impact assessment criteria

5.8 Ground Vibration Impact Assessment Criteria

The Applicant shall ensure that the ground vibration level from blasting at the development does not exceed the criteria in Table 5 at any residence on privately owned land or noise sensitive location as defined in the DEC's *Industrial Noise Policy*.

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Table 6: Ground vibration impact assessment criteria

5.9 Blasting Hours

The Applicant shall only carry out blasting at the development between 9 am and 5 pm (EST) and 9 am and 6 pm (DST) Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the DEC.

5.10 Blasting - Operating Conditions

(a) The Applicant shall ensure that all blasting at the site is carried out in accordance with best practice to:
- ensure the safety of people, property, and livestock; and
- minimise the dust and fume emissions from blasting, particularly during adverse meteorological conditions,

to the satisfaction of the Director-General.

(b) If established by an expert , whose appointment has been approved by the Director-General, that blasting at the site causes damage to property or structures, the Applicant shall rectify the damage in consultation with the landowner, and to the satisfaction of the Director-General. The Applicant is to pay any costs associated with the appointment and assessment undertaken by the appointed expert.

5.11 Blast Monitoring

Prior to carrying out any blasting in the Roseville Pit to the north of Bowens Road, the Applicant shall prepare (and subsequently implement) a Blast Monitoring Program for the Stratford coal mine, including the Bowens Road North operations, to the satisfaction of the Director-General.

5.12 Air Impact Assessment Criteria

The Applicant shall ensure that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 7, 8, and 9 at any residence on any privately owned land, excluding the land listed in Table 1.

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 7: Long-term Impact Assessment Criteria for Particulate Matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 8: Short-term impact assessment criterion for particulate matter

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Table 9: Long-term impact assessment criteria for deposited dust

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

5.13 Air Quality - Operating Conditions

The Applicant shall:

- ensure any visible air pollution generated by the development is assessed regularly, and that mining operations are relocated, modified, and/or stopped as required to minimise air quality impacts on privately owned land and public roads, such as Bowens Road and Bucketts Way; and
- implement all reasonable and feasible measures to minimise the off-site odour and fume emissions generated by any blasting or spontaneous combustion at the development,

to the satisfaction of the Director-General.

5.14 Air Quality Monitoring

By the end of May 2006, the Applicant shall prepare (and subsequently implement) a detailed Air Quality Monitoring Program for the Stratford coal mine, including the Bowens Road North operations to the satisfaction of the Director-General. This program shall include a protocol for evaluating compliance with the air quality impact assessment criteria in Tables 7, 8 and 9.

5.15 Lighting Emissions

The Applicant shall:

- take all feasible and reasonable measures to mitigate off-site lighting impacts from the development; and
- ensure that all external lighting associated with the development complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*,

to the satisfaction of the Director-General.

6. ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT

6.1 Notification of Landowners

If the results of the air quality and/or noise monitoring required in this consent identify that the air pollution and/or noise generated by the development is greater than any of the air quality and/or noise criteria in section 5 of this consent, excluding the landowners in Table 1, then the Applicant shall notify the Director-General and the affected landowners accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the air quality and/or noise criteria in section 5 of this consent.

6.2 Independent Review

(a) If a landowner considers the development to be exceeding the air quality and/or noise criteria in section 5 of this consent, excluding the landowners in Table 1, then he/she may ask the Applicant in writing for an independent review of the air pollution and/or noise impacts of the development on his/her land.

If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:

- consult with the landowner to determine his/her concerns;
- commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct air quality and/or noise monitoring on the land, to determine whether the development is complying with the relevant air quality and/or noise criteria in section 5 of this consent; and
- give the Director-General and landowner a copy of the independent review.

(b) If the independent review determines that the development is complying with the relevant air quality and/or noise criteria in section 5 of this consent, then the Applicant may discontinue the independent review with the approval of the Director-General.

(c) If the independent review determines that the development is not complying with the relevant air quality and/or noise criteria in section 5 of this consent, then the Applicant shall:

- take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant air quality and/or noise criteria; and
- conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or
- secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in section 5 of this consent,

to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the development is complying with the relevant air quality and/or noise criteria in section 5 of this consent, then the Applicant may discontinue the independent review with the approval of the Director-General.

If the measures referred to in above do not achieve compliance with the noise land acquisition criteria in section 5 of this consent, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then the Applicant shall, upon receiving a written request from the landowner, acquire the landowner's land in accordance with the procedures in condition 6.3 of this consent.

(d) If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution.

6.3 Land Acquisition

(a) Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:

- the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development the subject of the DA, having regard to the:
  - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
  - presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;
- the reasonable costs associated with:
  - relocating within the Gloucester local government area, or to any other local government area determined by the Director-General;

- obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
- reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.

If either party disputes the independent valuer's determination, then the independent valuer should refer the matter back to the Director-General.

Upon receiving such a referral, the Director-General shall appoint a panel comprising the:
(i) appointed independent valuer;
(ii) Director-General and/or nominee/s; and
(iii) President of the Law Society of NSW or nominee,
to consider submissions from both parties, including meeting with the parties individually if requested, and to determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired.

Within 14 days of receiving the panel's determination, the Applicant shall make a written offer to purchase the land at a price not less than the panel's determination.

If the landowner refuses to accept this offer within 6 months of the date of the Applicant's offer, the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

(b) The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred above.

(c) If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.

7. TRANSPORT AND UTILITIES

7.1 Rail Transport

(a) The Applicant shall only transport coal from the site by rail.

(b) The Applicant shall only receive and unload coal from the Duralie mine between 7am and 10pm.

7.2 Monitoring of Coal Transport

The Applicant shall:
- keep records of the:
  - amount of coal transported from the site each year; and
  - number of coal haulage train movements generated by the development (on a daily basis); and
- include these records in the AEMR.

7.3 Crossing of Bowens Road

(a) The Applicant shall construct, maintain, and operate the proposed crossing of Bowens Road to the satisfaction of Council.

(b) Prior to constructing the proposed crossing, the Applicant shall prepare (and subsequently implement) a Traffic Management Plan for a sealed crossing to the satisfaction of Council. This plan must describe the measures that would be implemented to:
- maintain the proposed crossing in a safe and serviceable condition during all weather conditions; and
- operate the proposed crossing safely to ensure there is no danger to other road users.

(c) By the end of 2011, unless otherwise agreed to by the Director-General, the Applicant shall close the proposed crossing of Bowens Road, and rehabilitate the road and adjoining land to the satisfaction of Council.

8. MONITORING, AUDITING, AND REPORTING

8.1 Environmental Management Strategy

(a) By the end of May 2006, the Applicant shall prepare (and subsequently implement) an Environmental Management Strategy for the Stratford coal mine, including the Bowens Road North operations, to the satisfaction of the Director-General. This strategy must:
- provide the strategic context for the environmental management of the development at the mine;
- describe the procedures that would be implemented to:
  - keep the local community and relevant agencies informed about the operations at the mine;
  - receive, handle, respond to, and record complaints;
  - resolve any disputes that may arise during the course of the development;
  - respond to any non-compliance; and
  - respond to emergencies; and
- describe the role, responsibility, authority, and accountability of all key personnel involved in the environmental management of the development with contact details.

(b) Within 3 months of the completion of each Independent Environmental Audit required in this consent, the Applicant shall review, and if necessary revise, the Environmental Management Strategy to the satisfaction of the Director-General.

8.2 Environmental Monitoring Program

(a) By the end of May 2006, the Applicant shall prepare (and subsequently implement) an Environmental Monitoring Program for the Stratford coal mine, including the Bowens Road North operations, to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in this consent into a single document.

(b) Within 3 months of the completion of the Independent Environmental Audit required in this consent, the Applicant shall review, and if necessary revise, the Environmental Monitoring Program to the satisfaction of the Director-General.

8.3 Annual Reporting

Each year, the Applicant shall prepare an AEMR to the satisfaction of the Director-General. This report must:
- identify the standards and performance measures that apply to the development;
- include a summary of the complaints received during the past year, and compare this to the complaints received in the previous 5 years;
- include a summary of the monitoring results on the development during the past year;
- include an analysis of these monitoring results against the relevant:
  - limits/criteria in this consent;
  - monitoring results from previous years; and
  - relevant predictions in the EIS and SEEs for the document;
- identify any trends in the monitoring over the life of the development;
- identify and discuss any non-compliance during the previous year; and
- describe what actions were, or are being, taken to ensure compliance.

8.4 Independent Environmental Audit

(a) By the end of 2006, and every three years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
- be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;
- be consistent with *ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing*, or equivalent updated versions of these guidelines;
- assess the environmental performance of the development, and its effects on the surrounding environment;
- assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;
- review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program; and
- if necessary, recommend measures or actions to improve the environmental performance of the development, and/or the environmental management strategy or monitoring systems.

(b) Within 3 months of commissioning this audit, the Applicant shall submit a copy of the audit report to the Director-General, with a response to any of the recommendations contained in the audit report.

8.5 Community Consultative Committee

(a) The Applicant shall ensure that there is a Community Consultative Committee to oversee the environmental performance of the development. This committee shall:

- be comprised of:
  - 2 representatives from the Applicant, including the person responsible for environmental management at the mine;
  - at least 1 representative from Council; and
  - at least 5 representatives from the local community, including 2 representatives from community groups,

  whose appointment has been approved by the Director-General in consultation with the Council;
- be chaired by the representative from Council;
- meet at least four times a year, or as determined by the Director-General; and
- review and provide advice on the environmental performance of the development, including any management plans, monitoring results, audit reports, or complaints.

(b) The Applicant shall, at its own expense:

- ensure that 2 of its representatives attend the Committee's meetings;
- provide the Committee with regular information on the environmental performance and management of the development;
- provide meeting facilities for the Committee;
- arrange site inspections for the Committee, if necessary;
- take minutes of the Committee's meetings;
- make these minutes available on the Applicant's website within 14 days of the Committee meeting, or as agreed to by the Committee;
- respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the development;
- forward a copy of the minutes of each Committee meeting, and any responses to the Committee's recommendations to the Director-General within a month of the Committee meeting; and
- reimburse the Council and representatives from the local community for all reasonable expenses incurred in attending the Committee's meetings.

8.6 Access to Information

(a) Within 1 month of the approval of any management plan or monitoring program required under this consent (or any subsequent revision of these management plans or monitoring programs), the completion of the independent audits required under this consent, or the completion of the AEMR, the Applicant shall:

- provide a copy of the relevant document/s to the Council, relevant agencies and the CCC; and
- ensure that a copy of the relevant documents is made publicly available at the mine,

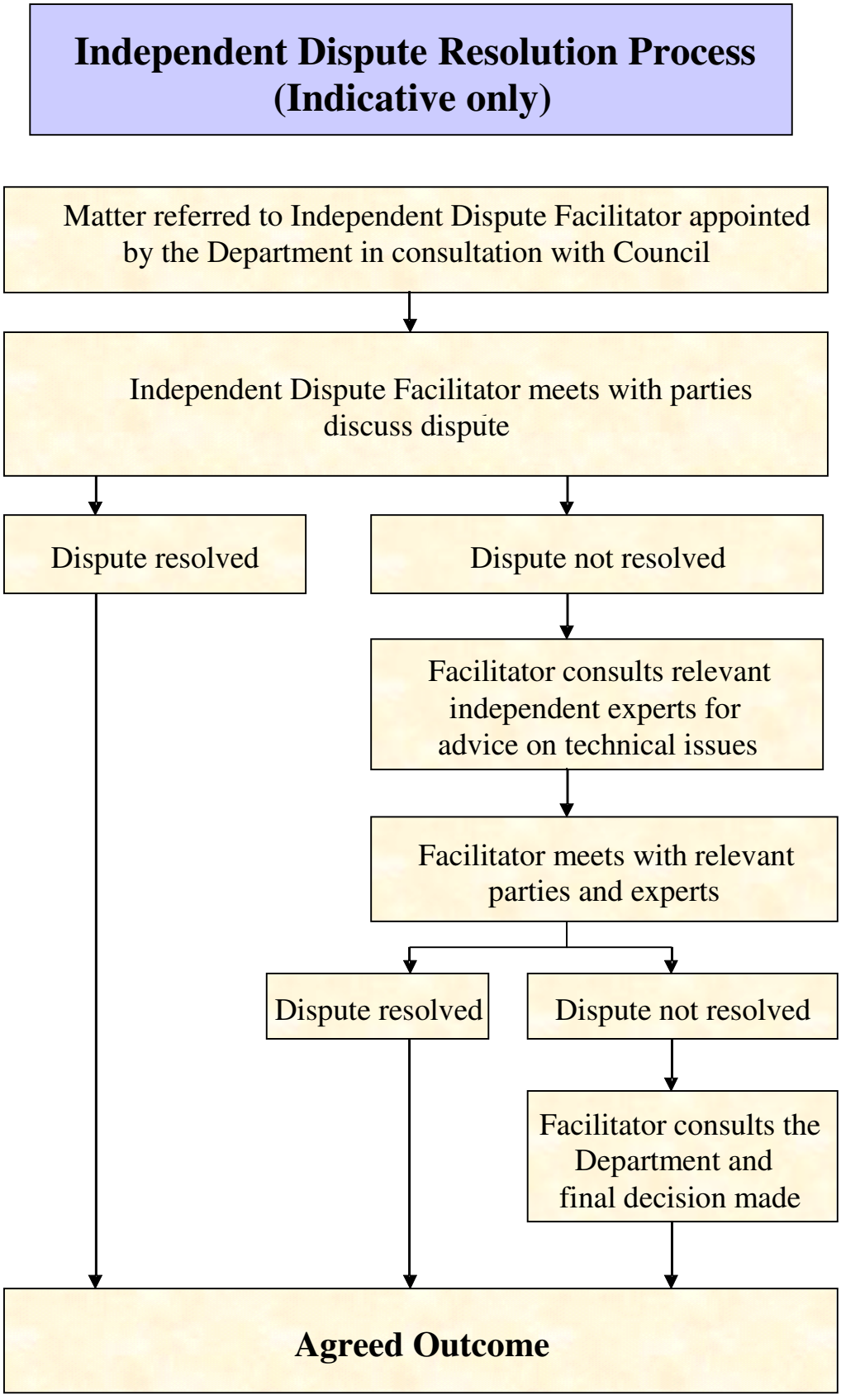
to the satisfaction of the Director-General.

(b) During the life of the development, the Applicant shall:

- make the results of the monitoring required under this consent publicly available at the Council and the mine; and
- update these results on a regular basis (at least every 4 months),

to the satisfaction of the Director-General.

APPENDIX 1
INDEPENDENT DISPUTE RESOLUTION PROCESS



ATTACHMENT 2

DEPARTMENT OF PLANNING – ISSUES TO BE ADDRESSED IN THE SEE

NSW GOVERNMENT
Department of Planning

Contact: Colin Phillips
Phone: (02) 9228 6483
Fax: (02) 9228 6466
Email: colin.phillips@planning.nsw.gov.au

Mr Graham Colliss
Chief Operating Officer
Gloucester Coal Ltd
PO Box 137
CHATSWOOD NSW 2057

Our ref:

Dear Mr Colliss

Proposed Modification of Consent (DA 23 98/99)
Stratford Coal Mine

I refer to your letter, dated 30 January 2008, asking the Department to consider the appropriate approval pathway for the company's proposal to improve the run-of-mine coal handling and coal product stockpile systems at the Stratford Coal Mine (SCM).

The Department has reviewed your request against the criteria in section 96 of the *Environmental Planning & Assessment Act 1979* (EP&A Act), and believes the proposal should be submitted as a section 96(2) modification application of the existing development consent for the Stratford Coal Mine (DA 23-98/99).

Statement of Environmental Effects Requirements
The modification application should be accompanied by a Statement of Environmental Effects (SEE) that addresses the potential impacts of the proposed modification. The SEE should include the following:

- **Description of the Proposal**: Describe and justify the proposal, clearly identifying the proposed modifications, and the likely inter-relationship between these modifications and the existing and/or approved operations at SCM.
- **Statutory Instruments**: Assess the proposal against relevant statutory provisions. You should justify the use of section 96(2) of the EP&A Act for the proposed modification.
- **Key Issues**: Assess the following potential impacts of the proposal during construction and operation, and describe what measures would be implemented to avoid, mitigate, manage, or off-set these impacts:
  (a) Noise - assess the potential noise impacts of the proposed modification in accordance with the requirements in the *NSW Industrial Noise Policy.* This assessment should consider the most recently available noise monitoring results to calibrate/validate the predictions of this noise impact assessment, and the identification and implementation of all reasonable and feasible noise mitigation measures, including the option of relocating the existing noise bund to the perimeter of the proposed product stockpile extension;
  (b) Air quality;
  (c) Aboriginal cultural heritage;
  (d) Fauna and flora;
  (e) Surface water management;
  (f) Visual; and
  (g) Social and economic.

- **Environmental Monitoring & Management**: Describe how the proposed modification would be monitored and assess whether any of the mine's environmental management plans would need to be revised.

Consultation

During the preparation of the SEE, you should consult with the Department of Environment and Climate Change, Department of Primary Industries, Department of Water and Energy, Gloucester Shire Council, and the landowners and occupiers that are likely to be affected by the proposal and address any issues in the SEE they may raise.

Administration

You should notify the Department at least 2 weeks before you lodge the application for the proposed modifications, so that necessary arrangements to exhibit the modification application and SEE can be made, including the provision of hard and soft copies of the SEE to government agencies and exhibition locations.

When you lodge the modification application you must include:

- Hard and soft copies of the SEE; and
- A cheque for the modification application fee and advertising (see clause 258 of the *Environmental Planning and Assessment Regulation 2000*), made payable to the Department.

Should you have any queries, please contact Colin Phillips at the details listed above.

Yours sincerely,

Howard Reed 3.3.08
A/Manager
Mining and Extractive Industries
as Delegate for the Director-General

STATEMENT OF ENVIRONMENTAL EFFECTS

Stratford Coal Mine
Coal Handling Modification

APPENDICES

APPENDIX A

NOISE ASSESSMENT

HEGGIES

REPORT 10-3140-R3

Revision 0

Stratford Coal Mine
Coal Handling Modification
Noise Impact Assessment

PREPARED FOR

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2 JUNE 2008

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Overview

In December 1994 Stratford Coal Pty Ltd (SCPL) was granted approval to develop the Stratford Coal Mine (SCM) - an open cut mine utilising drill and blast, truck and shovel extractive methods with on-site processing. A summary of the SCM approvals history is provided in the Coal Handling Modification Statement of Environmental Effects main text. The mine is situated between the townships of Stratford and Craven, New South Wales (NSW), with consent to operate for a period of 17 years.

The approved SCM includes:

- An open cut coal mine based on the Stratford Main Deposit (the SCM Main Pit operations were completed in August 2003) with existing and approved open cut mining in the Roseville Pit, the Roseville Pit Extension (RPE) and the Roseville West Pit (RWP).
- A coal preparation plant (CPP) and run-of-mine (ROM) and product coal stockpiles.
- A rail loop to facilitate transport of product coal to Newcastle.
- ROM coal production at a rate of up to 3.4 million tonnes per annum (Mtpa), comprising 2.1 Mtpa from SCM and an additional 1.3 Mtpa from the Duralie Coal Mine (DCM).
- Unloading, loading, processing and washing of coal from the DCM.
- Emplacement of CPP rejects, including those generated by the processing of DCM ROM coal, within the SCM site.
- Mining of ROM coal from the Roseville Seam between the hours of 7.00 am and 10.00 pm.

In 2001, the Bowens Road North Open Cut (BRNOC) coal mine was granted development consent with operations commencing in early 2003. The cumulative daytime and evening mine operating noise, rail transportation noise and blasting emissions associated with the simultaneous operation of the BRNOC and the SCM were presented in the BRNOC Environmental Impact Statement (EIS).

SCPL proposes to improve the SCM efficiency by modifying the handling and storage of the ROM and product coal (the Modification). Heggies Pty Ltd (Heggies) has been engaged by SCPL to evaluate and assess the potential noise impacts associated with the Modification. The assessment has been guided by the NSW Department of Planning (DoP) Statement of Environmental Effects Requirements dated 3 March 2008, which state:

(a) Noise - assess the potential noise impacts of the proposed modification in accordance with the requirements in the NSW Industrial Noise Policy. This assessment should consider the most recently available noise monitoring results to calibrate/validate the predictions of this noise impact assessment, and the identification and implementation of all reasonable and feasible noise mitigation measures, including the option of relocating the existing noise bund to the perimeter of the proposed product stockpile extension; …

1.2 Modification Proposal Overview

The Modification is limited in extent in comparison to the approved developments (**Appendix A**) and no change to the SCM or BRNOC coal mining operations, coal production rates or product coal transport coal transport rates is proposed. The Modification is described in **Section 2.3** and comprise:

- Modification to the ROM stockpile area including a small additional ROM coal conveyor and second ROM coal stacker, for improved separation of DCM thermal and coking coals on the ROM pad.

- Modification to the product coal stockpile area, including a new (smaller) product coal stockpile and associated additional product coal conveyors and coal reclaim systems.

The modifications to the product coal stockpile and ROM pad area are necessary to:

- Increase product coal stockpiles on-site to compensate for current coal capacity limitations through the Port of Newcastle.
- Increase stockpile handling efficiency by reducing dozer operations.
- Allow improved blending of coals.
- Increase train loading efficiency (as being promoted by the Hunter Valley Coal Chain and Rail Providers).
- Reduce cross contamination to maintain product coal quality to meet customer's specifications by having segregation between coal types.

A detailed comparison of the approved and modified Projects in presented in **Appendix A**. The provisional schedules of development for the SCM/RPE/RWP/BRNOC and Modification are presented in **Table 1**.

Table 1 Provisional SCM/RPE/RWP/BRNOC and Modification Schedules

Year End	BRNOC Year of Operation		SCM - Year of Operation			
			Stratford Main Deposit	RPE	RWP[1]	Coal Handling Modification
June 2001	0	Stage 1	7	-	-	-
June 2002	1		8	-	-	-
June 2003	2		9	-	-	-
June 2004	3	Stage 2	Closed	-	-	-
June 2005	4		-	-	-	-
June 2006	5		-	0	-	-
June 2007	6		-	1	0	-
June 2008	7		-	Closed	1 (Phase 1)	Construction
June 2009	8		-	-	2 (Phase 2)	1
June 2010	9		-	-	3	2
June 2011	10		-	-	Closed	3
June 2012	Closed		-	-	-	Closed

Note 1: RWP Phase 1 and Phase 2 in accordance with existing approvals.

The approved SCM/RPE/RWP and BRNOC hours of operation are presented in **Table 2**. The Modification would be required to operate 24 hours, 7 days per week consistent with the current SCM Consent.

Table 2 Approved SCM/RPE/RWP and BRNOC Hours of Operation

Phase	Approved BRNOC	Approved SCM	Approved RPE/RWP	Coal Handling Modification
Construction	n/a	n/a	n/a	0700 hrs to 1800 hrs 7 days per week
Mine Operation	0700 hrs to 1900 hrs 7 days per week	24 hours 7 days per week	0700 hrs to 2200 hrs 7 days per week	As per SCM
Coal handling, processing and stockpiling	0700 hrs to 1900 hrs 7 days per week	24 hours 7 days per week	As per SCM	As per SCM
On-site train unloading	n/a	0700 hrs to 2200 hrs 7 Days per week	As per SCM	As per SCM
On-site train loading	0700 hrs to 2200 hrs[1] 7 days per week	0700 hrs to 2200 hrs[1] 7 days per week	As per SCM	As per SCM
Off site rail transportation	0700 hrs to 2200 hrs[1] 7 days per week	0700 hrs to 2200 hrs[1] 7 days per week	As per SCM	As per SCM
Blasting	0900 hrs to 1700 hrs Monday to Saturday	0900 hrs to 1700 hrs Monday to Saturday	As per SCM	As per SCM

Note 1: Unless loading outside these hours is determined to be unavoidable by the Rail Access Corporation, National Rail and/or FreightCorp.

1.3 Existing Approvals and Assessment Requirements

The SCM incorporates the existing RPE/RWP and SCPL has consent to operate (with respect to noise and vibration emissions) in accordance with the following approval requirements:

- Environment Protection Licence (EPL) No 5161 anniversary date 30 June, review date 24 April 2011 (relevant sections attached as **Appendix B1**).
- Development Consent (DA 23-98/99) dated 5 February 1999 and subsequent amendments dated 16 February 2007 (relevant sections attached as **Appendix B2**).

SCPL has consent to operate the BRNOC (with respect to noise and vibration emissions) in accordance with the following approval requirements:

- EPL No 11745 anniversary date 16 December, review date not later than 29 March 2011 (relevant sections attached as **Appendix B3**).
- Development Consent (DA 39-02-01) dated 25 July 2001 and Amendment (39-02-01-MOD-2) dated 17 November 2004 (relevant sections attached as **Appendix B4**).

Modification Assessment

The current noise limits (ie Consent and EPL) for the SCM/RPE/RWP and BRNOC mining operations have been determined from previous noise impact assessments, namely:

- Heggies Report 10-1033-R1 Revision 3 Bowen Road North Project Operating and Transportation Noise and Blasting Impact Assessment dated 17 January 2001 - including predictive daytime and evening noise emissions from the cumulative SCM and BRNOC operations.

- Heggies Report 10-3140-R1 Stratford Coal Mine Operating Noise Impact Assessment dated 19 August 2005 - including predictive daytime, evening and night-time noise emissions from the cumulative SCM/RPE and BRNOC operations.
- Heggies Report 10-3140-R2 Stratford Coal Mine Roseville West Pit Modification Operating Noise and Blasting Impact Assessment dated 4 October 2006 - including predictive daytime and evening noise emissions from the cumulative SCM/RPE/RWP and BRNOC operations.

Each assessment was conducted in accordance with the requirements of the NSW Industrial Noise Policy (INP). The mines cumulative noise emissions were evaluated and assessed against the INP's acceptable $L_{Aeq(15minute)}$ intrusive and $L_{Aeq(period)}$ amenity project specific noise levels (PSNLs) for nearest privately owned noise sensitive receivers. Noise limits and other noise related conditions were subsequently determined by the DoP and the NSW Department of Environment and Climate Change (DECC) generally in accordance with the INP's consent/licence guidelines including implementation of all reasonable and feasible noise mitigation measures on the site. In view of the foregoing, the purpose of this noise impact assessment is as follows:

- Review existing mine noise emissions presented in recent quarterly monitoring reports and assess SCM compliance with the approved noise limits.
- Review the status of the SCM noise mitigation programme and recommend additional noise mitigation measures (if relevant) with the aim of maintaining existing mine operating noise levels (ie no increase in noise levels during operation of the Modification).
- Assess the cumulative daytime noise impact during construction of the Modification - assuming this activity coincides with the approved SCM/RPE/RWP (Phase 1) and BRNOC operations (including reflecting contemporary mobile equipment fleets in the approved mining areas).
- Assess the cumulative daytime/evening and night-time noise impact of the operation of the Modification - coinciding with the approved SCM/RPE/RWP (Phase 2) and BRNOC operations (including reflecting contemporary mobile equipment fleets in the approved mining areas).
- Evaluate whether the removal of a section of the existing visual/noise bund to the south of the existing product stockpile would result in elevated noise levels at receptors to the south, and identify whether a replacement noise bund is required to maintain SCM noise emissions at approved levels at private residences to the south.

SCPL are obligated under the current Consent requirements to implement all reasonable and feasible noise mitigation measures to the Modification by applying low noise materials handling technology to the additional conveyor systems and drives and would procure a low noise D10 Dozer (or equivalent) for use on the existing and new coal stockpiles.

2 PROJECT OVERVIEW

2.1 Noise Sensitive Receivers

The SCM site and surrounding area are illustrated on the Land Ownership Plan attached as **Appendix C**. The nearest potentially affected residential and rural dwellings beyond the Mine Lease boundary are presented in **Table 3** including property numbers, landholder names, dwelling locations and coordinates.

Table 3 Nearest Potentially Affected Residential and Rural Dwellings

Locality	Property Number/ Landholder	Description	ENM Dwelling Coordinates[1]		
			East (m)	North (m)	Elevation (m)
Stratford/ Craven Residential	90b Bagnall[2,3]	The Bucketts Way, Craven	8278	12300	125
	49 Isaac (south)[2]	The Bucketts Way, Stratford	8680	13520	130
	48 Isaac (north)[2]	The Bucketts Way, Stratford	8550	13850	130
	Craven Village	The Bucketts Way, Craven	9276	10578	130
	69 Blanch[2]	The Bucketts Way, Craven	9450	10575	140
	68 Devereaux[2]	The Bucketts Way, Craven	9575	10700	145
	93c Standen	Off Woods Road, Craven	8675	10665	138
	95 Smith	Off Woods Road, Craven	8700	10625	138
	Stratford Village	The Bucketts Way, Stratford	8650	14775	130
	90a Battaglini[2]	Off The Bucketts Way, Stratford	8100	13150	130
	84 Lowrey	Off The Bucketts Way, Stratford	8100	14800	120
Stratford/ Craven Rural	24 Ellis[2,3]	Off Wenhams Cox Road, Stratford	12250	16000	130
	18 Atkins	Wheatleys Road, Stratford	10284	16560	110
	89 McIntosh	Off Upper Avon Road, Stratford	7500	12950	145
	46 Wadland[3]	Off Bowens Road, Stratford	13258	13328	252
	13 Tiedeman	Off Fairbairns Lane, Stratford	11150	17450	120
	16 Williams	Off the Bucketts Way, Stratford	9100	17140	130
	93 Campbell	Woods Road, Craven	7925	10850	152
	83 Thompson	Off The Bucketts Way, Stratford	7600	14400	140
	29 Walker	Off The Bucketts Way, Stratford	8575	16700	130
	10 Bignell	Off The Bucketts Way, Stratford	8750	18300	130
	6 Burrel	Off Fairbairns Lane, Stratford	12575	17925	125
	26 Clarke	Off Bowens Road, Stratford	13175	14250	150
	19 Wadland	Off Wenhams Cox Road, Stratford	9159	15990	120
	31 Wenham	Off Wenhams Cox Road, Stratford	9032	15718	120
	33 Wadland	Off Wenhams Cox Road, Stratford	9302	15856	120
	78a Whatmore	Off The Bucketts Way, Stratford	8352	17022	145
	78b Whatmore	Off The Bucketts Way, Stratford	7954	17278	140
	31a Wenham	Off The Bucketts Way, Stratford	8287	15573	128
	82a Pickett	Off The Bucketts Way, Stratford	8950	15773	120

Note 1: To convert to ISG coordinates add 380,000 mE and add 1,430,000 mN.

Note 2: Properties identified in the SCM Development Consent as being in the Noise Acquisition (Affectation) Zone.

Note 3: Properties identified in the BRNOC Development Consent as being in the Noise Acquisition (Affectation) Zone.

2.2 Comparative Plant and Equipment Schedules

The potential for machinery to emit noise is quantified as the sound power level (SWL) expressed in A-weighted decibels (dBA) re 1 pW. At the receptor, the received noise is quantified as the sound pressure level (SPL) expressed in dBA re 20 μPa. The INP's energy equivalent (L_{eq}) assessment parameters has introduced greater mathematical rigour to the prediction of received noise levels as it enables the use of L_{eq} SWL as noise model inputs. In general terms, any variation in mine site L_{eq} SWL will produce a similar variation in the $L_{eq(15minute)}$ sound pressure level at the receiver.

Comparative plant and equipment fleets are presented in **Table 4** together with the overall mine site L_{eq} SWLs from the SCM as approved in 1999 (DA 23-98/99), the approved SCM/RWP Modification (February 2007) and the Modification including the mobile equipment fleets anticipated for use in the approved mining areas.

Table 4 Approved SCM and Proposed RWP Modification Equipment Fleet

Equipment Description	SCM (July 1999 Approval)		SCM/RWP (Phase 1) (February 2007 Approval)		Modification with approved SCM/RWP (Phase 1)	
	No of Items	SWL (dB re 1 pW)	No of Items	SWL (dB re 1 pW)	No of Items	SWL (dB re 1 pW)[1]
Drills	1	116	1	119	1	119
Excavators (Coal)	2	115	1	106	1	108
Excavators (Waste)	2	120	2	116	2	116
789 Haul Trucks	6	132	-	-	-	-
785 Haul Trucks	6	131	-	-	-	-
775 Haul Trucks	-	-	3	122	4	126
A40D Haul Trucks	-	-	4	120	3	117
A30D Haul Trucks	-	-	4	116	-	-
Dozers (Inpit)	1	114	-	-	-	-
Dozers (Dump)	1	119	1	120	2	120
Water Cart	1	120	1	120	1	113
Loaders (ROM)	1	117	1	115	1	110
Graders	1	115	1	115	1	112
Mobile Fleet	**22**	**135**	**19**	**129**	**16**	**129**
Primary Crusher		107		107		107
Secondary Crusher		113		105		106
CPP		122		122		122
Stockpile Dozer	1	120	1	117	1	112
Coal Stockyard		109		109		111
Trains/Rail Loadout		114		114		114
Rail Loadin		112		112		113
Coal Handling		**125**		**124**		**124**
Overall Total		**136**		**130**		**130**

Note 1: Where available, the SWL of the equipment measured during the March 2007 survey have been used.

As shown above, the overall site L_{eq} SWL from the Modification (130 dBA) is the same as the approved SCM/RWP Modification (130 dBA) and significantly lower by comparison with the SCM as approved in 1999 (DA 23-98/99) (136 dBA). The coal handling system SWL also remains unchanged by the Modification as noise increases from additional stockpile conveyors, drives and stacking systems are potentially off-set by the low noise performance of the new stockyard dozer.

2.3 Modification Construction and Operation

Appendices D1, D2 and **D3** shows the approved SCM and BRNOC projects and illustrate the location and scale of the Modification. As can be seen on **Appendix D1**, the scale of the modification is very minor in comparison to the approved SCM and BRNOC developments and the Modification is located wholly within the existing CPP operational area.

The following describes the Modification in further detail.

Additional Product Stockpile

A new stockpile area would be created immediately to the south of the existing product stockpile area. Thereby extending the total product pile area southwards by some 100 m, but still within the area bounded to the south by the existing rail unloading conveyor CV17. To provide for this area, a section of the existing visual/noise bund wall south of the existing stockpile would be removed. The section of the bund wall to the south of the CPP would remain (and be raised by 3 m), thereby maintaining the current CPP noise management system.

The new stockpile would be fed by an elevated single conveyor, approximately of the same height as the existing skyline conveyors with a travelling tripper to permit the discharge of material along the length of the pile in order to minimise dozer operation.

The new stockpile would be capable of receiving approximately 60,000 tonnes (t) of coal without dozing. The coal reclaim system at the stockpile would comprise four vibrating stockpile activators and coal valves beneath the stockpile of the same type as at the existing stockpile. Reclaimed coal would discharge directly onto a new conveyor within a tunnel beneath the stockpile. Product coal would then be delivered to the existing conveyor CV06 for transfer into the existing training loading bin.

ROM Pad Additional Conveyor and Stacker

At the ROM pad the Modification would involve installation of a fixed tripper on existing conveyor CV18 to allow ROM coal (delivered by train from DCM) to be diverted onto a new fixed stacker via a short conveyor (CV21), or to allow material to continue on conveyor CV18 to the existing stacker at the ROM pad.

The new stacker would be the similar to the existing stacker, thereby providing 6,000 t of stacking capacity in a single conical pile approximately 40 m in diameter and 15 m high. Generally, DCM thermal ROM coal would be handled by the new stacker and the DCM coking coal would be handled by the existing stacker at the ROM pad.

The additional conveyor and stacker would enable reduced use of the dozer on the ROM pad. Currently when DCM changes ROM coal production from thermal to coking coal (or vice versa) the ROM stockpile has to be dozed away from the stacker prior to train unloading, to avoid cross contamination.

Construction Phase

The Modification construction phase would involve the use of contractor mobile equipment as shown in **Table 5**. Construction is scheduled to occur over a nine month period. Maximum construction noise emissions are anticipated to occur during the initial earth works period (ie when the dozer, excavator and small articulated trucks are operating), while existing daytime mining, processing and coal handling activity at SCM and BRNOC would continue.

Table 5 Modification Construction Mobile Equipment

No of Items	Construction Fleet	Construction Activity
3	Volvo Haul Trucks (Articulated) A30	Earth Works and Concreting Works
1	CAT D6 Dozer	
1	Water Cart	
1	30t Excavator	
1	50t Crane	Concreting Works/Steelwork/Assembly
1	Concrete Pump	

3 ACOUSTICAL AND METEOROLOGICAL ENVIRONMENT

3.1 Pre-mining Background Noise Environment

Previous studies detail the background noise environment in the absence of mining operations being a rural noise environment, with RBLs ranging from 30 dBA to 32 dBA during the daytime, evening and night-time with insignificant industrial noise contributions. These noise levels have previously formed the basis for the assessment of intrusive mine emissions against the relevant project specific noise levels and the determination of the consented noise limits.

3.2 Mine-inclusive Ambient Noise Environment

Annual Environmental Management Report (AEMR) June 2007

SCPL's 2007 AEMR presents a summary of SCM and BRNOC noise monitoring results during the reporting period, other noise investigations and control measures and community complaint details. The AEMR reports noise compliance was achieved during the daytime, evening and night-time periods during the December 2006 and June 2007 quarterly noise surveys. Some marginal (1 dBA to 2 dBA) exceedances of the relevant noise criteria were recorded at (90b) Bagnall, Craven village and (49) Issac (south) during the September 2006 and/or March 2007 surveys.

In addition to the routine quarterly monitoring, two detailed noise investigations were conducted in response to resident concerns at (84) Lowrey and Healy (off Glen Rd, Craven). Again, the evening and night-time noise compliance was reported at the Healy property and only marginal (1 dBA) exceedances of the evening and night-time criteria were recorded at (84) Lowrey.

September and December 2007 Noise Monitoring Summary

Routine noise monitoring was conducted in September and December 2007 in accordance with the SCPL current Noise Management Plan (Vipac, 2006). The September report confirms noise compliance was achieved during the daytime, evening and night-time periods at all eight monitoring locations. Similarly, the December report confirms noise compliance was achieved during the daytime, evening and night-time periods at all eight monitoring locations, except at (49) Issac (south) and Van der Drift (Wood St, Stratford) where only marginal (1 dBA) exceedances were recorded during the evening.

3.3 Noise Complaint Records

In calendar year 2007, there were six operational noise complaints recorded for SCM and BRNOC combined, falling significantly from the 21 complaints relating to operational noise recorded in 2004. No on-site rail noise complaints were received in calendar years 2006 or 2007.

To date in 2008, one on-site operational noise complaint has been received.

3.4 Meteorological Environment

The prevailing SCM meteorological conditions have been previously determined in accordance with the INP and for the purposes of this assessment (and for consistency with previous studies) remain unchanged as presented in **Table 6**.

Table 6 Calm and Noise Enhancing Meteorological Modelling Parameters

Period	Meteorological Parameter	Air Temp	Relative Humidity	Wind Velocity	Temperature Gradient
Daytime	Calm	18°C	60%	0 m/s	0°C/100 m
Evening	Calm	14°C	75%	0 m/s	0°C/100 m
Night-time[1]	Wind only	10°C	90%	North north-east 3 m/s	0°C/100 m
Night-time[2]	Inversion only Winter	10°C	90%	0 m/s	3°C/100 m
Night-time[3]	Inversion and Drainage	10°C	90%	North north-east 2 m/s	3°C/100 m

Note 1: INP default wind speed 3 m/s.
Note 2: INP default temperature inversion 3°C/100 m.
Note 3: INP default temperature inversion 3°C/100 m and 2 m/s north north-east drainage flow.

4 NOISE MITIGATION AND MODELLING METHODOLOGY

4.1 Mine Noise Mitigation

An appreciable level of effort has been applied by SCPL to identify and implement reasonable and feasible on-site noise controls since the commencement of mining particularly to minimise the impact of night-time noise emissions from the SCM.

Some of the following noise controls were implemented as a result of the mitigation measures identified as reasonable and feasible in the previous RWP noise impact assessment. An extract from SCPL's 2007 AEMR summaries the noise mitigation investigated and/or implemented during the reporting period as follows:

> *The following operational measures have been undertaken in an effort to reduce/control noise emissions:*
>
> - *BRN mining fleet of 789 Cat trucks and 994 Liebherr excavators replaced with smaller Cat 775E and Cat 30T trucks and small excavators,*
> - *Roseville mine fleet Cat 30T trucks and small excavators,*
> - *Roseville pit haul road surface designed below natural surface to reduce noise emissions*
> - *Establishment of noise bunds on the western side of Roseville Extension Pit,*
> - *BRN and Roseville mining activities restricted to the hours of 7:00am to 5:30pm with only occasional weekend work,*
> - *Reversing sirens on mobile plant have been replaced with broad band "duck quacks",*
> - *Start up alarms on CPP conveyors have been turned down to minimum levels consistent with maintaining coal mine safety regulations,*

- *Installation of exhaust mufflers on product stockpile dozer,*
- *Installation of noise cladding on secondary crushing circuit,*
- *Installation of noise attenuation boarding adjacent to ROM hopper,*
- *Maintenance of acoustic barriers (e.g. noise bunds) along the northern side of the main haul road, the western site of the western haul road and the western side of the Roseville haul road to control noise emissions from mobile plant. Noise bunds are also maintained on the western side of the BRN haul road and northern perimeter of the BRN box cut.*
- *Train scheduling is under the control of Pacific National, the trail transport contractor, in conjunction with the Rail Infrastructure Corporation, rail ownership and management. Pacific National was approached by SCPL with a view to scheduling trains on day and afternoon shifts as much as possible to avoid/minimise train loading on night shift. However, Pacific National reiterated its previous position of being constrained by other non-coal users of the Northern Rail Line as well as demands at the Newcastle coal loading facility, and hence is not able to avoid night time train loading.*

Modification Noise Mitigation

The DoP were recently advised of the current status of SCM's noise control programme in SCPL's letter entitled *Report on Noise Mitigation Measures* dated 20 March 2008. The mitigation measures described in the letter have been adopted and/or further amended for the Modification operational noise model and used in the predictive assessment as follows:

- Installed ROM front-end loader (FEL) CAT988 (or equivalent) with maximum L_{eq} operating SWL of 110 dBA.
- Installed 5 m high ROM hopper barrier. ROM coal stockpiles to be maintained at 5 m height whenever possible and FEL to be operated generally within the ROM coal stockpile area.
- Installed secondary crusher SWL 106 dBA. Note, the RWP noise assessment identified a 10 dBA noise reduction requirement for the crusher with 7 dBA achieved to date.
- The new coal stockpile would replace approximately 150 m of a visual/noise bund wall located to the west of the CPP. The primary purpose of the bund (relative level [RL] 137 m) was to provide a modest level of noise attenuation from the ground levels of the CPP, particularly for dwellings located to the south-west (ie Craven village). The new coal stockpile would retain a minimum RL 137 (even when empty) and the effective height of the barrier (provided by the existing bund) would not be compromised.
- Consistent with the RWP assessment, the remaining southern length of the visual/noise bund wall adjacent to the CPP would be increased in height by approximately 3 m to RL 140 m.
- Installed coal stockpile CAT D10 Dozer (or equivalent) with an operating L_{eq} SWL of 110 dBA (ie forward 107 dBA and reverse 112 dBA).
- Installed new conveyors and drives (new product stockpile and ROM conveyor/stacker) to be consistent with current low noise conveyor system technology, procured and commissioned in accordance with an acoustic design specification. Hence, the new conveyor systems would be installed with lower noise emissions by comparison with the existing conveyor systems.

4.2 Mine Noise Modelling Procedure

The validated SCM computer model (refer to RWP for validation details) was modified to incorporate the significant noise sources associated with the Modification construction and operation. The surrounding terrain and nearby potentially affected residential dwellings were also included in the model. In addition, the model was updated and calibrated using recent on-site noise monitoring of SWLs of on-site equipment (refer VIPAC report dated 30 March 2007) and includes the proposed noise mitigation measures described above.

The Modification computer model was prepared using RTA Software's Environmental Noise Model (ENM for Windows, Version 3.06), a commercial software system developed in conjunction with the (then) NSW Emvironmental Protection Agency (EPA). The acoustical algorithms utilised by this software have been endorsed by the Australian and New Zealand Environment Council and all State Environmental Authorities throughout Australia as representing one of the most appropriate predictive methodologies currently available.

The cumulative mobile equipment and fixed plant scenarios associated with the Modification construction and operation are summarised in **Table 7**.

Table 7 Cumulative Modification Construction and Operating Scenarios

Mining Activity	**Modification Construction Daytime only Commencing Mid 2008**	**Modification Operation 24 hours per day Commencing Early 2009**
Modification Construction	Daytime over a 9 month period involving up to 6 items of on-site mobile equipment at anytime	Construction complete
Modification Operation	n/a	Operating
CPP and Coal Stockpiling	Operating	
Train Loading or Train Unloading		
RWP	Phase 1 - Primary waste stripping utilising a portion of the BRNOC waste mining fleet	Phase 2 - Coal and waste mining RWP coal fleet being utilised for CDA coal mining
RPE	RPE accepting RWP waste RPE coal fleet being utilised for CDA coal mining	RPE Mining complete
Co-Disposal Area (CDA)	CDA campaign coal mining (representative of worth case)	CDA campaign coal mining (representative of worth case)
BRNOC	BRNOC coal mining coinciding with RWP primary waste stripping	BRNOC coal and waste mining coinciding with RWP coal, waste and CDA coal mining

Note: The RWP noise impact assessment identified that coal mining from the co-disposal area would give rise to marginally higher noise levels by comparison with coal mining from the RPE.

Modelling of mining operations included all existing and proposed plant items operating concurrently to simulate the overall maximum energy equivalent (ie $L_{Aeq(15minute)}$) intrusive noise level. The model includes both coal loading or coal unloading operations and train movement on the rail loop. A large proportion of the mobile equipment is operated in repeatable routines and a relatively smaller proportion of the emissions emanate from continuous fixed plant items.

The L_{Aeq} SWLs given for each item of mobile equipment do not include noise emissions which emanate from alarms. In the event that alarm noise is considered to be a source of disturbance, the alarm noise level should be checked against the appropriate Australian Standard and/or requirements and the necessary mitigating action taken to achieve an acceptable noise reduction without compromising safety standards. It is noted that SCPL have installed broad-band "quacker" reversing alarms on the mobile equipment fleet.

5 MINE NOISE IMPACT ASSESSMENT

5.1 Daytime - Modification Construction

The cumulative daytime Modification construction $L_{Aeq(15minute)}$ intrusive emissions to the nearest dwellings are presented in **Table 8** together with the consented noise limits. Note, all predicted noise levels meet the relevant noise limit, except at 90b Bagnall which may marginally (2 dBA) exceed the limit during the initial Modification construction earthworks (daytime).

It is noted that the Bagnall residence was already identified as being within the Noise Acquisition (Affectation) Zone of the approved SCM (in the SCM Development Consent) due to night-time noise emissions under adverse weather conditions (up to 45 dBA).

Table 8 Cumulative Daytime Construction $L_{Aeq(15minute)}$ Noise (dBA re 20 µPa)

Locality	Land Owner	Intrusive level Calm[1]		SCM Consented Noise Limits	
		Train Loading	Train Unloading	RWP Initial 10m	RWP 10m below
Stratford/ Craven Residential	90b Bagnall[3]	**38**[2]	**39**[2]	37	37
	49 Isaac (south)[3]	36	35	38	37
	48 Isaac (north)[3]	35	35	37	37
	Craven Village[4]	35	35	37	37
	69 Blanch[3]	34	34	37	37
	68 Devereaux[3]	36	36	37	37
	93c Standen[4]	35	34	37	37
	95 Smith[4]	32	32	37	37
	Stratford Village[4]	31	31	36	35
	90a Battaglini[3]	34	34	37	37
	84 Lowrey	28	27	35	35
Stratford/ Craven Rural	24 Ellis[3]	35	35	–[5]	–[5]
	18 Atkins[4]	33	33	37	37
	89 McIntosh[4]	35	34	37	37
	46 Wadland[3]	33	33	37	37
	13 Tiedeman[4]	30	30	37	37
	16 Williams	29	29	35	35
	93 Campbell[4]	32	32	37	37
	83 Thompson[4]	30	30	35	35
	29 Walker	28	28	35	35
	10 Bignell	24	24	35	35
	6 Burrel	23	23	35	35
	26 Clarke	21	21	35	35
	19 Wadland	31	31	35	35
	31 Wenham	31	31	35	35
	33 Wadland	31	31	35	35
	78a Whatmore	28	28	35	35
	78b Whatmore	29	29	35	35
	31a Wenham	30	30	35	35
	82a Pickett	30	30	35	35

Note 1: Meteorological modelling parameters as described in **Table 6**.
Note 2: Marginal Noise Management Zone 1 dBA to 2 dBA above Project specific criteria.
Note 3: Properties identified in the BRNOC and/or SCM Development Consents as being in the Noise Acquisition (Affectation) Zone.
Note 4: Properties identified in the BRNOC and/or SCM 2005 INP Noise Assessment as being in the Noise Management Zone.
Note 5: Subject to commercial agreement between SCPL and the landowner.

5.2 Daytime - Modification Operation

The cumulative daytime Modification operating $L_{Aeq(15minute)}$ intrusive emissions to the nearest dwellings are presented in **Table 9** together with the consented noise limits. Note, all predicted noise levels meet the relevant noise limit.

Table 9 Cumulative Daytime Operation $L_{Aeq(15minute)}$ Noise (dBA re 20 µPa)

Locality	Land Owner	Intrusive level Calm[1]		SCM Consented Noise Limits
		Train Loading	Train Unloading	
Stratford/ Craven Residential	90b Bagnall[2]	36	37	37
	49 Isaac (south)[2]	36	35	37
	48 Isaac (north)[2]	35	35	37
	Craven Village[3]	33	33	37
	69 Blanch[2]	33	33	37
	68 Devereaux[2]	34	34	37
	93c Standen[3]	33	32	37
	95 Smith[3]	32	31	37
	Stratford Village[3]	33	33	35
	90a Battaglini[2]	33	33	37
	84 Lowrey	29	28	35
Stratford/ Craven Rural	24 Ellis[2]	36	36	_[4]
	18 Atkins[3]	34	34	37
	89 McIntosh[3]	35	34	37
	46 Wadland[2]	35	35	37
	13 Tiedeman[3]	30	30	37
	16 Williams	30	30	35
	93 Campbell[3]	30	30	37
	83 Thompson[3]	30	30	35
	29 Walker	29	29	35
	10 Bignell	25	25	35
	6 Burrel	24	24	35
	26 Clarke	22	22	35
	19 Wadland	31	31	35
	31 Wenham	31	31	35
	33 Wadland	31	31	35
	78a Whatmore	29	29	35
	78b Whatmore	30	30	35
	31a Wenham	30	30	35
	82a Pickett	30	30	35

Note 1: Meteorological modelling parameters as described in **Table 6**.
Note 2: Properties identified in the BRNOC and/or SCM Development Consents as being in the Noise Acquisition (Affectation) Zone.
Note 3: Properties identified in the BRNOC and/or SCM 2005 INP Noise Assessment as being in the Noise Management Zone.
Note 4 Subject to commercial agreement between SCPL and the landowner.

5.3 Evening - Modification Operation

The cumulative evening Modification operating $L_{Aeq(15minute)}$ intrusive emissions to the nearest dwellings are presented in **Table 10** together with the consented noise limits. All predicted noise levels meet the relevant noise limit.

Table 10 Cumulative Evening Operation $L_{Aeq(15minute)}$ Noise (dBA re 20 µPa)

Locality	Land Owner	Intrusive level Calm[1]		SCM Consented Noise Limits
		Train Loading	Train Unloading	
Stratford/ Craven Residential	90b Bagnall[2]	37	37	37
	49 Isaac (south)[2]	36	35	36
	48 Isaac (north)[2]	35	35	36
	Craven Village[3]	33	33	35
	69 Blanch[2]	35	33	36
	68 Devereaux[2]	35	35	36
	93c Standen[3]	33	32	35
	95 Smith[3]	31	31	35
	Stratford Village[3]	31	31	35
	90a Battaglini[2]	33	33	36
	84 Lowrey	28	28	35
Stratford/ Craven Rural	24 Ellis[2]	30	29	_[4]
	18 Atkins[3]	31	31	35
	89 McIntosh[3]	34	34	35
	46 Wadland[2]	33	33	35
	13 Tiedeman[3]	26	26	35
	16 Williams	27	27	35
	93 Campbell[3]	30	30	35
	83 Thompson[3]	30	30	35
	29 Walker	26	26	35
	10 Bignell	22	22	35
	6 Burrel	18	18	35
	26 Clarke	18	18	35
	19 Wadland	28	28	35
	31 Wenham	29	29	35
	33 Wadland	28	29	35
	78a Whatmore	26	26	35
	78b Whatmore	28	28	35
	31a Wenham	28	28	35
	82a Pickett	28	28	35

Note 1: Meteorological modelling parameters as described in **Table 6**.
Note 2: Properties identified in the BRNOC and/or SCM Development Consents as being in the Noise Acquisition (Affectation) zone
Note 3: Properties identified in the BRNOC and/or SCM 2005 INP Noise Assessment as being in the Noise Management Zone.
Note 4 Subject to commercial agreement between SCPL and the landowner.

5.4 Night-time - Modification Operation

The cumulative night-time Modification operating $L_{Aeq(15minute)}$ intrusive emissions to the nearest dwellings are presented in **Table 11** together with the consented noise limits. All predicted noise levels meet the relevant noise limit.

Table 11 Cumulative Night-time Operation $L_{Aeq(15minute)}$ Noise (dBA re 20 µPa)

Locality	Land Owner	Cumulative Intrusive Noise Level[1]			SCM Consented Noise Limits
		NNE Wind	Inversion	Inversion & Drainage	
Stratford/ Craven Residential	90b Bagnall[2]	44	40	44	45
	49 Isaac (south)[2]	33	41	36	42
	48 Isaac (north)[2]	32	41	35	42
	Craven Village[3]	39	36	40	40
	69 Blanch[2]	39	37	41	42
	68 Devereaux[2]	40	38	42	42
	93c Standen[3]	39	35	40	40
	95 Smith[3]	37	35	38	39
	Stratford Village[3]	22	32	24	35
	90a Battaglini[2]	41	40	41	42
	84 Lowrey	25	33	27	35
Stratford/ Craven Rural	24 Ellis[2]	15	26	18	_[4]
	18 Atkins[3]	15	25	17	35
	89 McIntosh[3]	39	37	39	39
	46 Wadland[2]	22	29	27	35
	13 Tiedeman[3]	13	23	15	35
	16 Williams	15	25	17	35
	93 Campbell[3]	39	35	39	40
	83 Thompson[3]	31	35	33	35
	29 Walker	17	26	18	35
	10 Bignell	11	21	13	35
	6 Burrel	8	21	11	35
	26 Clarke	7	23	11	35
	19 Wadland	16	28	19	35
	31 Wenham	16	28	18	35
	33 Wadland	18	29	20	35
	78a Whatmore	19	26	21	35
	78b Whatmore	18	19	10	35
	31a Wenham	19	29	21	35
	82a Pickett	16	28	18	35

Note 1: Meteorological modelling parameters as described in **Table 6**.
Note 2: Properties identified in the BRNOC and/or SCM Development Consents as being in the Noise Acquisition (Affectation) zone
Note 3: Properties identified in the BRNOC and/or SCM 2005 INP Noise Assessment as being in the Noise Management Zone.
Note 4 Subject to commercial agreement between SCPL and the landowner.

The predicted Modification operating night-time $L_{Aeq(15minute)}$ intrusive noise contours during inversion only and inversion with drainage are presented as **Appendices E1** and **E2**, respectively. Note, the calculation of the noise contours involves numerical interpolation of a noise level array with a graphical accuracy of up to approximately ±2 dBA. This means that in some cases the contour locations will differ from the values in **Table 11**, particularly where topographic effects are prominent.

6 SUMMARY OF FINDINGS AND RECOMMENDATIONS

6.1 Modification Noise Assessment Procedure

SCPL proposes to improve the SCM efficiency by modifying the coal handling and storage of the ROM and product coal via the Modification. The Modification is limited in extent to the existing CPP operational area and no change to the SCM coal mining operations, coal production rates or product coal transport coal transport rates is proposed.

Current noise limits (ie Consent and EPL) for the SCM/RPE/RWP and BRNOC mining operations were determined from previous noise impact assessments. Each noise impact assessment was conducted in accordance with the requirements of the INP (or applicable criteria at the time of assessment).

The SCM and BRNOC cumulative noise emissions were evaluated and assessed against the INP's acceptable $L_{Aeq(15minute)}$ intrusive and $L_{Aeq(period)}$ amenity project specific noise levels for nearest privately owned noise sensitive receivers. Noise limits and other noise related conditions were subsequently determined by the DoP and DECC, generally in accordance with the INP's consent/licence guidelines including implementation of all reasonable and feasible noise mitigation measures on the site.

SCPL are obligated under its current Consent requirements to implement all reasonable and feasible noise mitigation measures to the Modification by applying low noise materials handling technology to the additional conveyor systems and drives and would procure a low noise D10 Dozer (or equivalent) for use on the existing and new coal stockpiles.

6.2 Modification Noise Mitigation

The DoP were recently advised of the current status of SCM's noise control programme in SCPL's letter entitled *Report on Noise Mitigation Measures* dated 20 March 2008. The mitigation measures described in the letter have been adopted and/or further amended for the Modification operational noise model and used in the predictive assessment as follows:

- Installed ROM FEL CAT988 (or equivalent) with maximum L_{eq} operating SWL of 110 dBA.
- Installed 5 m high ROM hopper barrier. ROM coal stockpiles to be maintained at 5 m height whenever possible and FEL to be operated generally within the ROM coal stockpile area.
- Installed secondary crusher SWL 106 dBA.
- The new coal stockpile would replace approximately 150 m of visual/noise bund located to the west of the CPP. The primary purpose of the bund (RL 137 m) was to provide a modest level of noise attenuation from the ground levels of the CPP, particularly for dwellings located to the south-west (ie Craven village). The new coal stockpile would retain a minimum RL 137 (even when empty) and the effective height of the existing bund would not be compromised.
- Consistent with the RWP assessment, the remaining southern length of the visual/noise bund wall adjacent to the CPP would be increased in height by approximately 3 m to RL 140 m.
- Installed coal stockpile CAT D10 Dozer (or equivalent) with an operating L_{eq} SWL of 110 dBA (ie forward 107 dBA and reverse 112 dBA).

- Installed new conveyors and drives (new product stockpile and ROM conveyor/stacker) to be consistent with current low noise conveyor system technology, procured and commissioned in accordance with an acoustic design specification. Hence, the new conveyor systems would be installed with lower noise emissions by comparison with the existing conveyor systems.

6.3 Modification Noise Impact Assessment

The cumulative Modification construction and operating intrusive noise emissions were predicted via computer modelling using plant and equipment schedules anticipated for use and updated (where available) with recent noise data collated from the SCPL noise monitoring programme and application of SCPL agreed noise mitigation measures. In conclusion:

- During construction of the Modification (daytime only), the cumulative daytime noise levels at the nearest dwellings are predicted to meet the relevant noise limits, except at 90b Bagnall, which may marginally (2 dBA) exceed the current (37 dBA) daytime limit during the initial Modification construction earthworks. It is noted that this residence is already in the SCM Noise Acquisition (Affectation) Zone and the night-time limit at this location is currently 45 dBA (refer **Table 11**).
- During operation of the Modification (daytime) the cumulative operating noise levels at the nearest dwellings are predicted to meet the relevant noise limits.
- During operation of the Modification (evening and night-time) the cumulative operating noise levels at the nearest dwellings are predicted to meet the relevant noise limits.
- The new stockpile would retain a minimum RL 137 m (even when empty) and the effective height of the existing bund would not be compromised. With a 3 m height increase to the remaining section of the noise bund to the south of the CPP, there is no need to build a new noise bund to the south of the new stockpile to maintain noise emissions at currently approved limits to the south of the CPP.

With the implementation of the noise mitigation measures proposed by SCPL it is concluded that from a noise perspective, the modification is minor in nature and would not require any alteration to the existing consented SCM noise limits during its operation.

An allowance for slightly elevated (daytime only) noise at the Bagnall residence during construction would be required, however, the predicted daytime construction noise remains well below the existing approved night-time operational SCM noise limits at this resident location.

COMPARISON OF THE APPROVED AND MODIFIED PROJECTS

Table 1
Comparison of the Approved and Modified Projects

Project Feature	SCM 1999 (DA-23/98-99)	Approved SCM Incorporating Roseville Pit Extension and Roseville West Pit	Modified SCM with the Coal Handling Modification
Life of Mine ROM Coal	• 23.5 Mt.	• Up to approximately 24.15 Mt.	• Unchanged.
Annual ROM Coal Production	• Up to 2.1 Mtpa.	• Unchanged.	• Unchanged.
Coal Processing	• CPP processing of up to 3.4 Mtpa of ROM coal (from both SCM and Duralie).	• Unchanged.	• Unchanged.
Annual Saleable Coal Production	• Up to 1.7 Mtpa.	• Up to 2.3 Mtpa.	• Unchanged.
Open Cuts	• Stratford Main Pit, Roseville Pit.	• Extension of Roseville Pit and addition of Roseville West Pit.	• Unchanged.
Waste Emplacement	• Combination of in-pit and out-of-pit waste emplacement.	• Unchanged.	• Unchanged.
Total Waste Mined	• 69 million bank cubic metres (Mbcm).	• 73.55 Mbcm.	• Unchanged.
Mine Fleet	• Excavators, haul trucks, water trucks, dozers, graders, scrapers, drills. • Approximately 20 items.	• Unchanged. • Fleet now reduced due to cessation of mining in the Stratford Main Pit.	• Unchanged. • Unchanged.
General Infrastructure	• Access roads, electricity supply and distribution, rail loop, CPP, train loading and unloading infrastructure, ROM coal stockpiles, coal handling equipment.	• Unchanged.	• Modified ROM coal and product coal conveyors, stockpiles, and product coal reclaim arrangements.
Operational Workforce	• Up to 110 people.	• Unchanged.	• Unchanged.
Life of Mine	• 11 years.	• 17 years from grant of Mining Lease.	• Unchanged.
Duralie Train Unloading Hours	• 7.00 am-10.00 pm.	• Unchanged.	• Unchanged.
Operating Hours	• Mine and CPP operating 24 hours per day 6 days per week.	• Unchanged.	• Unchanged.
	• Roseville pit only mined between 7.00 am and 10.00 pm.	• Roseville West Pit only mined between 7.00 am and 10.00 pm.	• Unchanged.
Water Supply	• Pit inflows and the on-site water management system.	• Unchanged.	• Unchanged.
Operational Road Transport Requirements	• Road traffic associated with the workforce, consumables, visitors and general deliveries and maintenance vehicles.	• Unchanged.	• Unchanged.

ENVIRONMENT PROTECTION LICENCE NO 5161 - STRATFORD COAL MINE

L6 NOISE LIMITS

L6.1 Noise Limits

L6.1.1 Noise from the premises must not exceed:

Land Holder	Daytime (7.00 am to 7.00 pm	Evening (7.00 pm to 10.00 pm)
	Stage 1: Cumulative Bowens Road North and Stratford $L_{Aeq(15minute)}$	Stage 1: Cumulative Bowens Road North and Stratford $L_{Aeq(15minute)}$
McIntosh	39	39
Atkins	38	35
Tiedeman	38	37
Campbell	37	37
Thompson	36	36
Williams	35	35
Bowen	35	35
Clarke	35	35
Bignell	35	35
Morgan	35	35
Isaac (South)	41	41
Isaac (North)	40	40
Craven Village	40	40
Grono/DBlanch	40	40
Blanch	40	40
Standen/Mulliett	39	39
Stratford Village	38	36
Van Der Drift	38	38
Battaglini	38	38
Lowrey	36	36
All Other Craven Village Residential Properties	40	40
All Other Stratford Village Residential Properties	38	36
All Other Stratford/ Craven Rural Properties	35	35

L6.1.2 Noise from the premises is to be measured or computed at the most noise-affected point at the property boundary of the receptors listed in L6.1, or a distance within 30 metres of the residence where the boundary is more than 30 metres from the residence of the most affected receiver to determine compliance with this condition.

Noise Measurement:

For the purpose of noise measures required for this condition, the LAeq noise level must be measured or computed for the required period (ie, 15 minutes or full day, evening or night) using "FAST" response on the sound level meter.

For the purpose of the noise limits for this condition, 5 dB (A) must be added to the measured level if the noise is substantially tonal, impulsive, intermittent or low frequency in nature. Where two or more of these characteristics are present the maximum addition to the measured noise level is limited to 10 dB(A).

L6.1.3 The noise emission limits identified in this licence apply under all meteorological conditions except:

a. during rain and wind speeds (at 10 m height) greater than 3m/s; and
b. under “non-significant weather conditions".

Note: Field meteorological indicators for non-significant weather conditions are described in the NSW Industrial Noise Policy, Chapter 5 and Appendix E in relation to wind and temperature inversions.

5.1 AIR QUALITY, BLAST, NOISE AND LIGHT MANAGEMENT

5.1 Acquisition Upon Request

a. Upon receiving a written request for acquisition from the landowner listed in Table 1, the Applicant shall acquire the land in accordance with the procedures in Condition 6.3 of this consent.

90 b - Bagnall	49 - Isaac (s)	68 - Devereaux
58 - Bramley	48 - Isaac (n)	90a - Battaglini
69 - D Blanch	93a - Blanch	24 - Ellis

Table 1: Land subject to acquisition upon request

Note: For more information on the numbering and identification of properties used in this consent, see Appendix 2.

b. By the end of May 2006, the Applicant shall notify the owners of the land listed in Table 1 that they have voluntary acquisition rights.

5.2 Noise and Dust Limits in the Acquisition Zone

While the land listed in Table 1 is privately-owned, the Applicant shall ensure that the noise generated by the development does not exceed the noise limits in Table 2, and the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria in Tables 7, 8, and 9 at any residence on the land.

Day LAeq(15minute)	**Evening LAeq(15minute)**	**Night LAeq(15minute)**	**Land Number**
37	37	45	90 b - Bagnall
37	36	43	93 a - Blanch
37	36	42	48 - Isaac (north) 49 -Isaac (south) 68 - Devereaux 69 - D Blanch 90 a - Battaglini

Table 2: Noise limits for land in the acquisition zone

Notes: If the Applicant has a written agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DEC, then the Applicant may exceed the noise limits in Table 2 or the air quality impact assessment criteria in Tables 7, 8, and 9 in accordance with the negotiated noise agreement.

• See notes in condition 5.3 for more detail on how to interpret these limits.

5.3 Noise Limits

The Applicant shall ensure that the noise generated by the development does not exceed the noise limits set out in Table 3.

Day LAeq(15minute)	**Evening LAeq(15minute)**	**Night LAeq(15minute)**	**Land Number**
37	35	40	Craven Village
37	35	40	93 c - Standen 93 - Campbell
37	35	39	95 - Smith 89 - McIntosh
37	35	35	18 - Atkins 13 - Teidman 46 - Wadland
35	35	35	All other privately-owned land excluding the land in Table 1

Table 3: Noise limits

Notes:

- If the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 2, and a copy of this agreement has been forwarded to the Department and the DEC, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement.
- Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the $L_{Aeq(15\ minute)}$ noise limits in the above table.
- Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- The noise emission limits identified in the above table apply under meteorological conditions of:
  - Wind speeds of up to 3 m/s at 10 metres above ground level; or
  - Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.

5.3A Roseville West Pit Noise Limits

During the commencement of the Roseville West Pit until mining operations are 10 metres below natural ground level, the Day noise limits applicable for:

- Stratford rural residences in Table 3 are increased by 2 dB(A);
- Stratford village residences in Table 3 are increased by 1 dB(A); and
- Issac (south) residence in Table 2 is increased by 1 dB(A).

5.4 Noise Acquisition Criteria

If the noise generated by the development exceeds the criteria in Table 4 at any privately-owned land, the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in Condition 6.3 of this consent.

Day **$L_{Aeq(15minute)}$**	**Evening** **$L_{Aeq(15minute)}$**	**Night** **$L_{Aeq(15minute)}$**	**Land Number**
42	41	40	Craven Village 93 c - Standen 93 - Campbell 95 - Smith 89 - McIntosh 18 - Atkins 13 - Teidman 46 - Wadland
40	41	40	All other privately-owned land excluding the land in Table 1

Table 4: Land acquisition criteria dB(A)

Note: Noise generated by the development is to be measured in accordance with the notes presented below in Table 3.

Additional Noise Mitigation Measures

5.5 Upon receiving a written request from:

- a landowner of the land listed in Table 1; or
- the owner of any residence where noise monitoring shows the noise generated by the development is greater than, or equal to, $L_{Aeq(15\ minute)}$ 38 dB(A) at night.

The Applicant shall implement additional noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

5.6 Noise Monitoring

By the end of May 2006, the Applicant shall prepare (and subsequently implement) a Noise Monitoring Program for the Stratford coal mine, including the Bowens Road North operations, to the satisfaction of the Director-General. This program shall include a noise monitoring protocol for evaluating compliance with the noise limits and acquisition criteria in this consent.

5.7 Noise - Continuous Improvement

The Applicant shall:

- investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance;
- investigate ways to transport as much coal as possible during the day and evening;
- implement all reasonable and feasible noise mitigation measures on the site; and
- report on these investigations and the implementation of any new noise mitigation measures on-site in the AEMR,

to the satisfaction of the Director-General.

L6 NOISE LIMITS

L6.1 Noise from the premises must not exceed:

Land Holder	Daytime (7.00 am to 7.00 pm)		Evening (7.00 pm to 10.00 pm)	
	Stage 1: Cumulative Bowens Road North/Stratford LAeq(15minute)	**Stage 2: Bowens Road LAeq(15minute)**	**Stage 1: Cumulative Bowens Road North/Stratford LAeq(15minute)**	**Stage 2: Bowens Road LAeq(15minute)**
McIntosh	39	37	39	37
Atkins	38	38	35	35
Tiedeman	38	35	35	35
Campbell	37	35	37	35
Thompson	36	35	36	35
Williams	35	35	35	35
Bowen	35	35	35	35
Clarke	35	35	35	35
Bignell	35	35	35	35
Morgan	35	35	35	35
Isaac (South)	41	37	41	36
Isaac (North)	40	36	40	36
Cravel Village	40	37	40	36
Grono/D Blanch	40	38	40	37
Blanch	40	38	40	38
Standen/Mulliett	39	36	39	36
Stratford Village	38	36	36	36
Van Der Drift	38	36	38	36
Battaglini	38	36	38	36
Lowrey	36	36	36	36
All Other Craven Village Residential Properties	40	37	40	36
All Other Stratford Village Residential Properties	38	35	36	36
All Other Stratford/Craven Rural Properties	35	35	35	35

L6.2 Noise from the premises is to be measured or computed at the most noise-affected point at the property boundary of the receptors listed in L6.1, or a distance within 30 metres of the residence where the boundary is more than 30 metres from the residence of the most affected receiver to determine compliance with this condition.

Noise Measurement:

For the purpose of noise measures required for this condition, the LAeq noise level must be measured or computed for the required period (ie, 15 minutes or full day, evening or night) using "FAST" response on the sound level meter.

For the purpose of the noise limits for this condition, 5 dB(A) must be added to the measured level if the noise is substantially tonal, impulsive, intermittent or low frequency in nature. Where two or more of these characteristics are present the maximum addition to the measured noise level is limited to 10dB(A).

L6.3 The noise emission limits identified in this licence apply under all meteorological conditions except:

(a) during rain and wind speeds (at 10m height) greater than 3m/s; and

(b) under "non-significant weather conditions".

Note: Field meteorological indicators for non-significant weather conditions are described in the NSW

Industrial Noise Policy, Chapter 5 and Appendix E in relation to wind and temperature inversions.

6.4 NOISE CONTROL

6.4.1 Noise Criteria

Noise Management Zone

(a) At dwellings where the noise criteria in Table 4 below are demonstrated to be exceeded, or are exceeded during mining operations, the Applicant shall undertake management measures as outlined in condition 6.4.1 (e) and the Noise Management Plan.

Table 4 Intrusive $L_{Aeq(15minute)}$ Noise Criteria for Stages 1 and 2 of the Bowens Road North Project

Location	Intrusive Criteria LAeq(15minute) dB(A)[4]	
	Day[1]	Evening[1]
Stratford/Craven residential[2]	36	36
Stratford/Craven rural[3]	35	35

Note 1: Day period is 7.00 am to 7.00 pm Evening period is 7.00 pm to 10.00 pm.

Note 2: Stratford/Craven residential area includes but is not limited to:

- Stratford and Craven villages; and
- Properties of Isaac (South), Isaac (North), Grono/D Blanch, Blanch, Standen/Mulliett, Van Der Drift, Battaglini, Lowrey as described in the EIS.

Note 3: Stratford/Craven rural area includes but is not limited to properties owned by McIntosh, Tiedeman, Williams, Campbell, Thompson, Bowen, Bignell, Morgan, and Clarke as described in the EIS.

Note 4: The noise limits apply for winds up to three (3) metres per second and/or Pasquill Stability Classes of A, B, C, D, E, and F.

Noise Acquisition Zone

(b) The acquisition zone for intrusive noise in Stages 1 and 2 of the Bowens Road North Project is defined by predicted or demonstrated exceedence of the noise levels at any non-mine owned dwellings of the dB(A) LAeq(15 minute) noise levels shown in Table 5 below.

Table 5 Intrusive $L_{Aeq(15minute)}$ Noise Acquisition Criteria for Stages 1 and 2 of the Bowens Road North Project

Location	Intrusive Noise Acquisition Criteria LAeq(15minute) dB(A)[4]	
	Day[1]	Evening[1]
Stratford/Craven residential[2]	> 41	> 41
Stratford/Craven rural[3]	> 40	> 40

Note 1: Day period is 7.00 am to 7.00 pm Evening period is 7.00 pm to 10.00 pm.

Note 2: Stratford/Craven residential area includes but is not limited to:

- Stratford and Craven villages; and
- Properties of Isaac (South), Isaac (North), Grono/D Blanch, Blanch, Standen/Mulliett, Van Der Drift, Battaglini, Lowrey as described in the EIS.

Note 3: Stratford/Craven rural area includes but is not limited to properties owned by McIntosh, Tiedeman, Williams, Campbell, Thompson, Bowen, Bignell, Morgan, and Clarke as described in the EIS.

Note 4: The noise limits apply for winds up to three (3) metres per second and/or Pasquill Stability Classes of A, B, C, D, E, and F.

(c) The properties in Table 6 below are predicted to experience noise levels greater than the intrusive acquisition criteria identified in Table 5 above, and shall be acquired by the Applicant if requested by the landowner in accordance with Condition 11.1.

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[34] EPA General Terms of Approval

Table 6 Dwellings Predicted to be Within the Intrusive Noise Acquisition Zone Property Number (as stated in the EIS)

Property Number (as stated in the EIS)	Property Owner
46	Wadland (Stratford/Craven rural)
24	Ellis (Stratford/Craven rural)
90 b	Bagnall (Stratford/Craven residential)

(d) Subclause (c) shall only apply whilst the Stratford Coal Mine is in operation. The provisions of subclauses (a), (b), and (e) – (n) shall continue to apply to the properties listed in Table 6 after cessation of operations at the Stratford Coal Mine.

(e) In the event that a landowner of a non-mine owned property considers that noise from the project once operational is in excess of:

- the noise levels depicted in Tables 4 or 5 above; or
- the noise levels depicted in Table 5 over more than 25% of his/her vacant land,

and the Director-General is satisfied that an investigation is required, the Applicant shall upon the receipt of a written request:

i) consult with the landowner or occupant affected to determine his/her concerns;

ii) make arrangements for, and bear the costs of, appropriate independent noise investigations in accordance with the noise management plan, and to the satisfaction of the Director-General, to quantify the impact and determine the source of the effect and:

- during Stage 1, the cumulative contribution of Stratford Coal Mine and Bowens Road North Coal Mine to the effect; or
- during Stage 2, the contribution of Bowens Roads North Coal Mine to the effect.

iii) take steps in accordance with a noise reduction plan prepared as part of the noise management plan, if exceedences are demonstrated to result from:

- the cumulative contribution of Stratford Coal Mine and Bowens Road North Coal Mine during Stage 1; or
- the contribution of Bowens Road North Coal Mine during Stage 2.

This shall include:

1) introduction of additional controls, either on noise emission from individual sources on the0site or one site operations or modify operations, to ensure that the criteria in Table 4 above are achieved, as far as possible; or

2) with the agreement of the landowner, and in the case of cumulative impacts the other relevant mining operations, undertaking of noise control at the dwelling to achieve acceptable internal noise levels due to Bowens Road North Coal Mine alone or due to all mining activities, as relevant; or

3) entering into an agreement with the landowner, and in the case of cumulative impacts the other relevant mining operations in the area and the landowner, to provide such other forms of benefit or amelioration of the impacts of noise as may be agreed between the parties, as providing acceptable compensation for the noise levels experienced;

iv) conducting follow up investigation(s) to the satisfaction of the Director-General, where necessary.

(f) If the independent noise investigation(s) in sub-clause (e) above confirms that noise criteria in Table 5 are being exceeded by:

- The cumulative contribution of Stratford Coal Mine and Bowens Road North Coal Mine during Stage 1; or
- The contribution of Bowens Road North Coal Mine during Stage 2.

And the measures in condition 6.4.4(e) (iii) do not reduce the noise levels below the criteria in Table 5, the Applicant shall, at the written request of the landowner, acquire the relevant property. Acquisition shall be in accordance with the procedures set out in Condition 11.1.

(g) If continued complaints and noise investigations confirm that noise criteria in Table 4 are being exceeded, but are less than the noise levels in Table 5, the Applicant shall continue to negotiate with the landowner, and other mines in the vicinity where relevant, until a resolution to the satisfaction of the Director-General is reached.

(h) If a landowner disputes any noise mitigation or other measures proposed by the Applicant in accordance with sub-clause (3) above, the matter shall be referred by either the Applicant or landowner to the Director-General in consultation with GSC. If the matter cannot be resolved within 21 days, the matter shall be referred to the Independent Dispute Resolution

(i) Further independent investigations shall cease if the Director-General is satisfied that the relevant criteria in Tables 4 and 5 are not being exceeded and are unlikely to be exceeded in the future.

(j) The Applicant shall, after commencement of mine construction and operations, and thereafter quarterly unless otherwise directed by the Director-General, undertake monitoring of affected residences to verify noise predictions, including management and acquisition zones. Any alterations to predictions, management and acquisition zones, shall be provided to the affected resident(s) and to the CCC together with necessary action in accordance with this Condition.

(k) [35]EPA Applicable Noise Limits for EPA licence purposes (refer to Schedule C).

(l) [36]For the purpose of noise measurement for subclause (k) above, noise from the premises must be measured 30 metres from the residence (rural situations), where the boundary is more than 30 metres from the residence, to determine compliance with this condition over a period of 15 minutes using “FAST” response on the sound level meter.

(m) [37]The LAeq(15minute) noise emission limits identified in subclause (k) above, apply for winds up to three (3) metres per second and/or Pasquill Stability Classes of A, B, C, D, E, and F.

(n) The Applicant shall implement appropriate mitigation measures to ensure noise impacts of operations (eg maintenance works) within the Bowens Road North Project area, carried on between 10.00 pm and 7.00 am, do not exceed 35 dBA at receivers, under meteorological conditions of winds up to three (3) metres per second and/or Pasquill Stability Classes of A, B, C, D, E, and F.

6.4.2 Noise Mitigation Measures

(a) [38]The Applicant shall establish earth barriers of a height of six metres along the northern and western perimeters of Bowens Road North Coal Mine.

(b) [39]Additional earth barriers may be required by the EPA should unacceptable noise impacts occur on sensitive receptors.

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[35] EPA General Terms of Approval
[36] EPA General Terms of Approval
[37] EPA General Terms of Approval
[38] EPA General Terms of Approval
[39] EPA General Terms of Approval

6.4.3 Noise Management Plan

(a) The Applicant shall, prior to commencement of mining construction or operations, prepare and implement a Noise Management Plan (incorporating construction and operational noise), to the satisfaction of the Director-General. The EPA and GSC should also be consulted prior to the finalisation of the Management Plan. The Plan shall:

(i) include details of the methods to be used for the continuous monitoring of noise to evaluate, assess and report the $L_{Aeq(15minute)}$ and L_{Aeq} (period) noise emission levels due to the normal operations of the Bowens Road North Coal Mine;

(ii) provide details regarding operating configuration; determining survey intervals; weather conditions and seasonal variations; selecting variations, locations, periods and times of measurements;

(iii) detail management measures where the target criteria in Table 4 of this consent are predicted to be exceeded, or are exceeded during mining operations. These measures should include but not be limited to:

- noise monitoring on-site and within the community, notwithstanding the requirements for noise compliance reports for Stages 1 and 2 of the Bowens Road North project. The selection of representative monitoring locations within the community must be carried out in consultation with the Director-General;
- prompt response to any community issues of concern;
- refinement of on-site noise mitigation measures and mine operating procedures where practical;
- discussions with relevant property holders to assess concerns;
- consideration of acoustical mitigation at receivers; and
- consideration of negotiated agreements with property owners.

(iv) specify the procedures for a noise monitoring program for the purpose of undertaking independent noise investigations;

(v) outline the procedure to notify property owners and occupiers likely to be affected by noise from the operations;

(vi) establish a protocol for handling noise complaints that include recording, reporting and acting on complaints, particularly where complaints are received and it is demonstrated noise levels are in excess of the criteria contained in this consent;

(vii) record appropriate mechanisms for community consultation;

(viii) outline proactive/predictive and reactive mitigation measures to be employed on the site to limit noise emissions;

(ix) identify longer term strategies directed towards mitigating noise levels that exceed the noise target levels in Table 4;

(x) outline measures to reduce the impact of intermittent, low frequency and tonal noise (including truck reversing alarms);

(xi) survey and investigate noise reduction measures from plant and equipment annually, subject to noise monitoring results and/or complaints received, and report in the AEMR at the conclusion of the first 12 months of operations and set targets for noise reduction taking into consideration valid noise complaints in the previous year; and

(xii) Include details of the inter-relationship of this plan with the Noise Management Plan for Stratford Coal Mine.

(b) The Applicant shall also:

(i) make copies of the Noise Management Plan available to the EPA, GSC and CCC within fourteen days of approval, or as otherwise agreed to be the Director-General; and

(ii) include a summary of noise monitoring results in the AEMR.

6.4.4 Noise Monitoring

(a) [40]The level of noise emitted from the premises must be monitored for 72 hours every three (3) months at locations agreed to in consultation with the EPA. The monitoring must determine $L_{Aeq(9hour)}$ $L_{Aeq(15minute)}$ $L_{A10(15minute)}$ $L_{A90(15minute)}$ and $L_{A1(1minute)}$ levels and include an assessment of the impact of operational noise on adjoining residents.

6.4.5 Mobile Equipment

(a) [41]Low noise mobile equipment and fixed plant shall be used wherever practical and economically achievable, including:

(c) [42]Where reversing alarm noise results in community disturbance, all relevant alarm noise levels shall be checked against the appropriate DMR requirements and all appropriate mitigation actions shall be implemented having regard to safety standards.

6.4.6 Noise Compliance

(a) [43]A noise compliance assessment must be submitted to the EPA within three (3) months of the commencement of the Bowens Road North Open Cut Coal mine and a further noise compliance assessment report shall be submitted to the EPA after the commencement of Stage 2 of Bowens Road Open Cut Coal mine.

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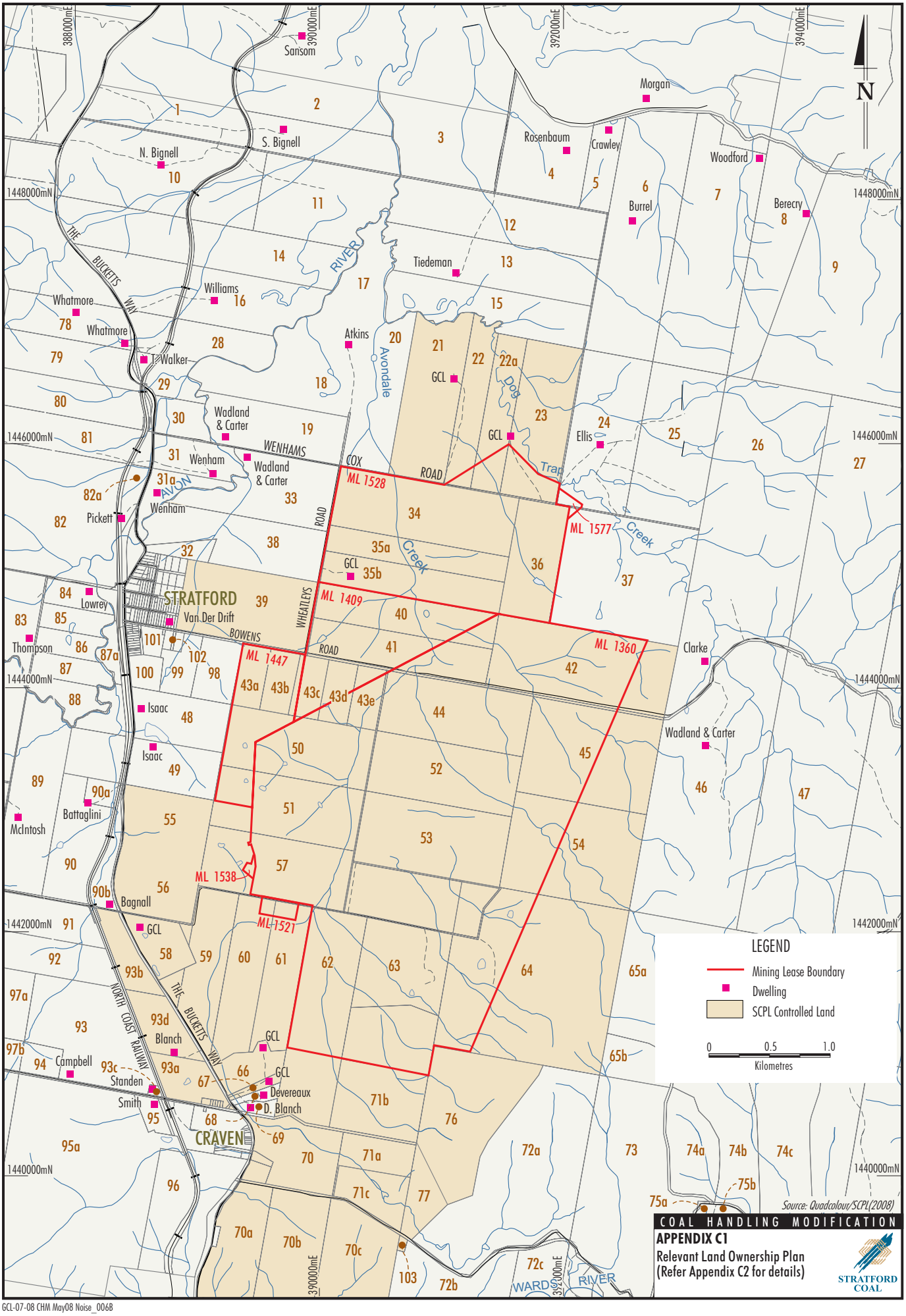
[40] EPA General Terms of Approval
[41] EPA General Terms of Approval
[42] EPA General Terms of Approval
[43] EPA General Terms of Approval

RELEVANT LAND OWNERSHIP PLAN



GCL-07-08 CHM May08 Noise_006B

RELEVANT LAND OWNERSHIP LIST

1. NE Bignell
2. Yarrawonga Pastoral Company Pty Ltd
3. Farley (Gloucester) Pty Ltd
4. DJ & DL Rosenbaum Pty Ltd
5. CD & TA Crawley
6. M Burrel
7. JE Woodford
8. AS Berecry
9. AS Berecry
10. NE Bignell
11. NE Bignell
12. J Tiedeman
13. J Tiedeman
14. NJ Williams
15. J Tiedeman
16. NJ Williams
17. SJ & LM Atkins
18. SJ & LM Atkins
19. TW Carter & YL Wadland
20. SJ & LM Atkins
21. Gloucester Coal Limited
22. Gloucester Coal Limited
22a. Gloucester Coal Limited
23. Gloucester Coal Limited
24. SG Ellis & Sons Pty Ltd
25. SG Ellis & Sons Pty Ltd
26. RC & CA Clarke
27. Burns
28. K & A Whatmore
29. T Walker
30. FA Wenham
31. FA Wenham
31a. FA Wenham
32. KJ & ME Albert
33. TW Carter & YL Wadland
34. Gloucester Coal Limited
35a. Gloucester Coal Limited
35b. Gloucester Coal Limited
36. Gloucester Coal Limited
37. SG Ellis & Sons Pty Ltd
38. FA Wenham
39. Gloucester Coal Limited
40. Gloucester Coal Limited
41. Gloucester Coal Limited
42. Gloucester Coal Limited
43a. Gloucester Coal Limited
43b. Gloucester Coal Limited
43c. Gloucester Coal Limited
43d. Gloucester Coal Limited
43e. Gloucester Coal Limited
44. Gloucester Coal Limited
45. Gloucester Coal Limited
46. TW Carter & YL Wadland
47. RL Bagnall
48. AS Isaac (North)
49. AS Isaac (South)
50. Gloucester Coal Limited
51. Gloucester Coal Limited
52. Gloucester Coal Limited
53. Gloucester Coal Limited
54. Gloucester Coal Limited
55. Gloucester Coal Limited
Lease to BC & EA Bramley
56. Gloucester Coal Limited
Lease to BC & EA Bramley
57. Gloucester Coal Limited
Lease to BC & EA Bramley
58. Gloucester Coal Limited
59. Gloucester Coal Limited
Lease to BC & EA Bramley
60. Gloucester Coal Limited
61. Gloucester Coal Limited
62. Gloucester Coal Limited
63. Gloucester Coal Limited
64. Gloucester Coal Limited
65a. TW Carter & YL Wadland
65b TW Carter & YL Wadland
66. Gloucester Coal Limited
67. Gloucester Coal Limited
68. C Devereaux
69. DJ Blanch
70. Gloucester Coal Limited
70a. Gloucester Coal Limited
70b. Gloucester Coal Limited
70c. Gloucester Coal Limited
71a. Gloucester Coal Limited
71b. Gloucester Coal Limited
71c. Gloucester Coal Limited
72a. SS Ellis
72b. SS Ellis
72c. C & C Bertolino
73. W Mantle
74a. MI Rounsley
74b. JA & DS Gartrell
74c. NJ Porter
75a. AJ & LM Hancock
75b. G & PB McCalden
76. Gloucester Coal Limited
77. Gloucester Coal Limited
78. K & A Whatmore
79. K & A Whatmore
80. FA Wenham
81. FA Wenham
82. GL Harris
82a. JH Pickett
83. M Thompson
84. KJ & R Lowrey
85. KJ & R Lowrey
86. KJ & R Lowrey
87. KJ & R Lowrey
87a. KJ & R Lowrey
88. AS Isaac
89. EAR & RK McIntosh
90. RL Bagnall
90a. WJ & JM Battaglini
90b. RL Bagnall
91. SH Morgan
92. SH Morgan
93. AR & AM Campbell
93a. LA Blanch
93b. Gloucester Coal Limited
Lease to BC & EA Bramley
93c. PA Standen
93d. LA Blanch
94. EA Yates
95. T Smith
95a. R Smith & SC Davern
96. R Smith & SC Davern
97a. LJ & IR Dillon
97b. GL & MF Wallace
98. Crown Land - Forestry Reserve
99. RV & LM Orlandi
100. Crown Land - Travelling Stock Reserve
101. Gloucester Shire Council
102. Crown Land - Reserve for Cemetery
103. MJ Ellis

Source: Quadcolour/SCPL(2008)

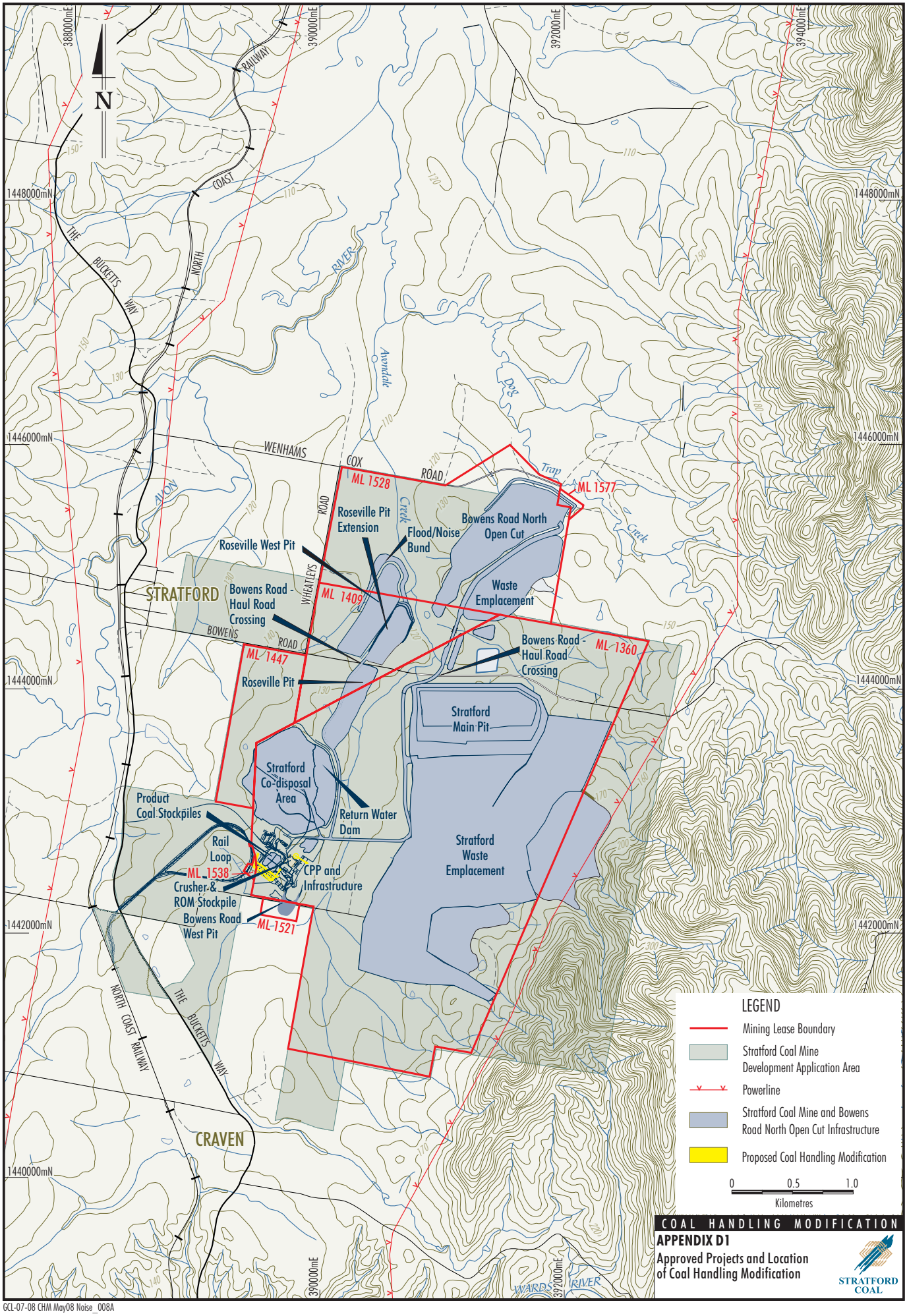
COAL HANDLING MODIFICATION

APPENDIX C2

Relevant Land Ownership List

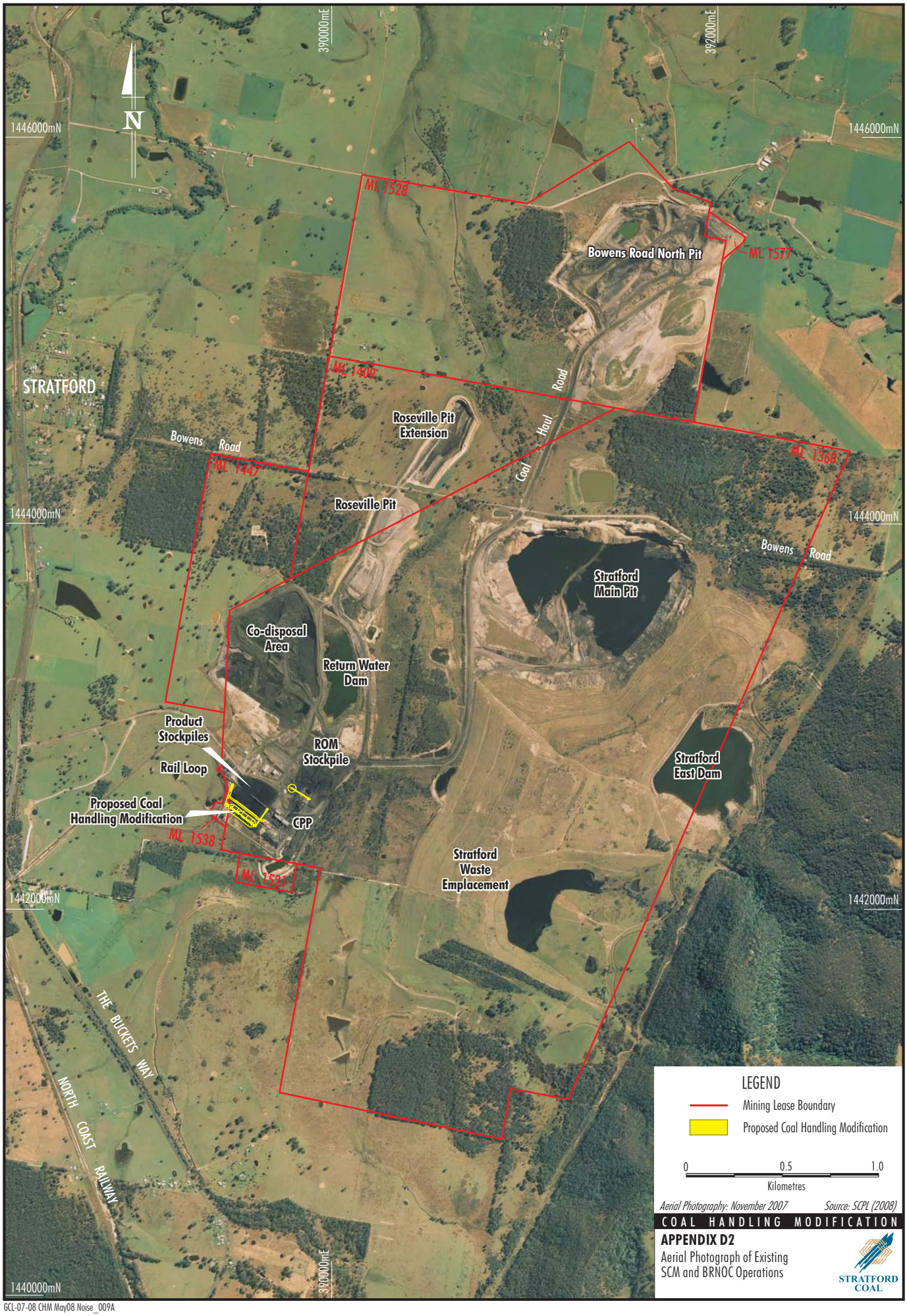
STRATFORD COAL

APPROVED PROJECTS AND LOCATION OF COAL HANDLING MODIFICATION



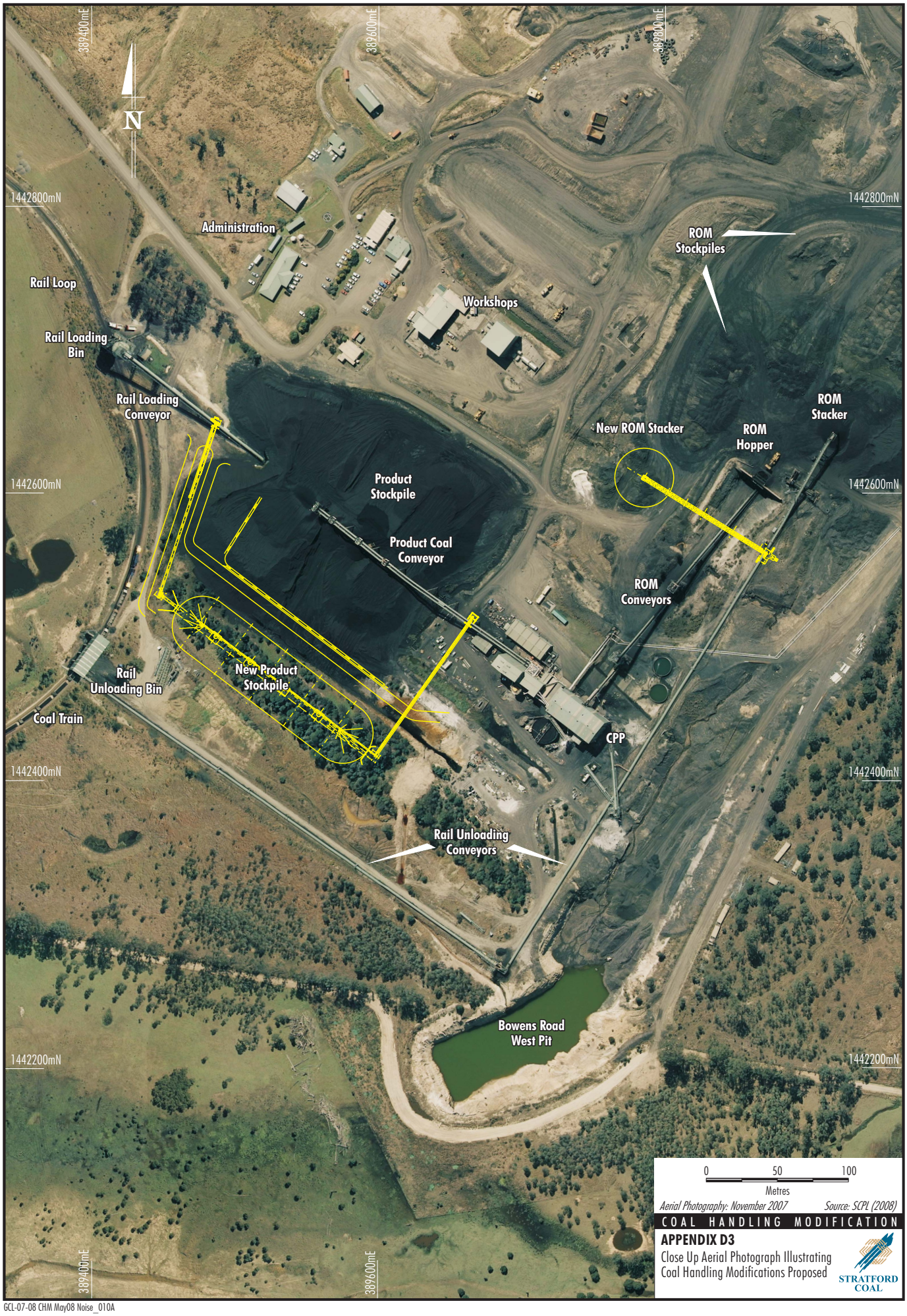
GCL-07-08 CHM May08 Noise_008A

AERIAL PHOTOGRAPH OF EXISTING SCM AND BRNOC OPERATIONS



GCL-07-08 CHM May08 Noise_009A

CLOSE UP AERIAL PHOTOGRAPH ILLUSTRATING COAL HANDLING MODIFICATIONS PROPOSED



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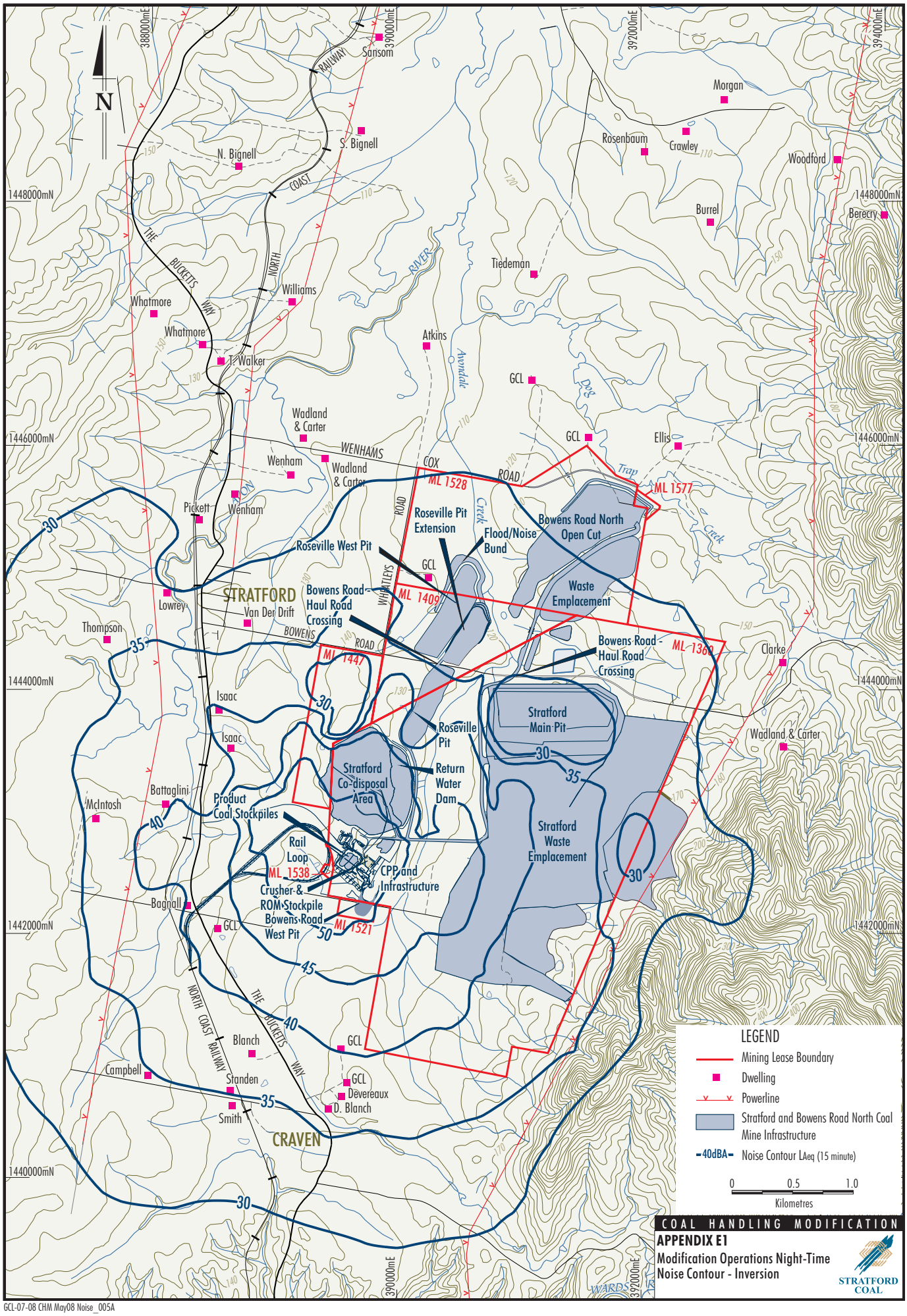
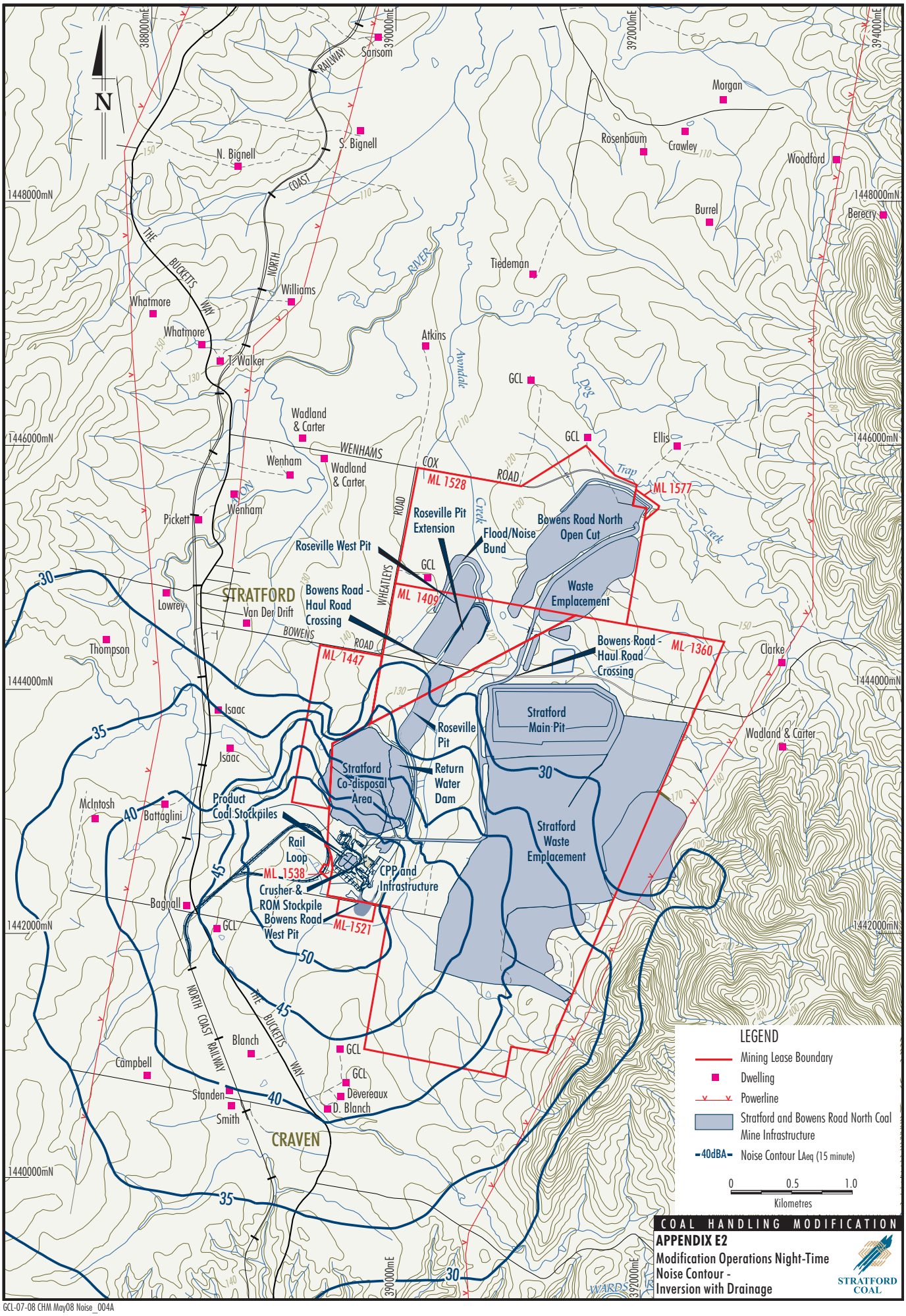
MODIFICATION OPERATIONS NIGHT-TIME NOISE CONTOUR - INVERSION



GCL-07-08 CHM May08 Noise_005A

MODIFICATION OPERATIONS NIGHT-TIME NOISE CONTOUR - INVERSION WITH DRAINAGE



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APPENDIX B

AIR QUALITY ASSESSMENT

Suite 2B 14 Glen Street
Eastwood NSW 2122
Phone: 61-2-9874 8644
Fax: 61-2-9874 8904
Email: shane.lakmaker@holmair.com.au

4 June 2008
Mr Graham Colliss
Stratford Coal Pty Ltd
c/- Ms Jules Blunt
Resource Strategies
jblunt@resourcestrategies.com.au

Dear Graham,

Air quality impacts of proposed modifications to coal handling at Stratford Coal Mine

1 INTRODUCTION

This letter provides an analysis of the air quality impacts associated with proposed minor modifications to operations at the Stratford Coal Mine (SCM). Gloucester Coal Limited (GCL) are submitting an application to modify the SCM Development Consent (DA-23/98-99) to improve the efficiency of the handling and storage of the run-of-mine (ROM) and product coal at the SCM.

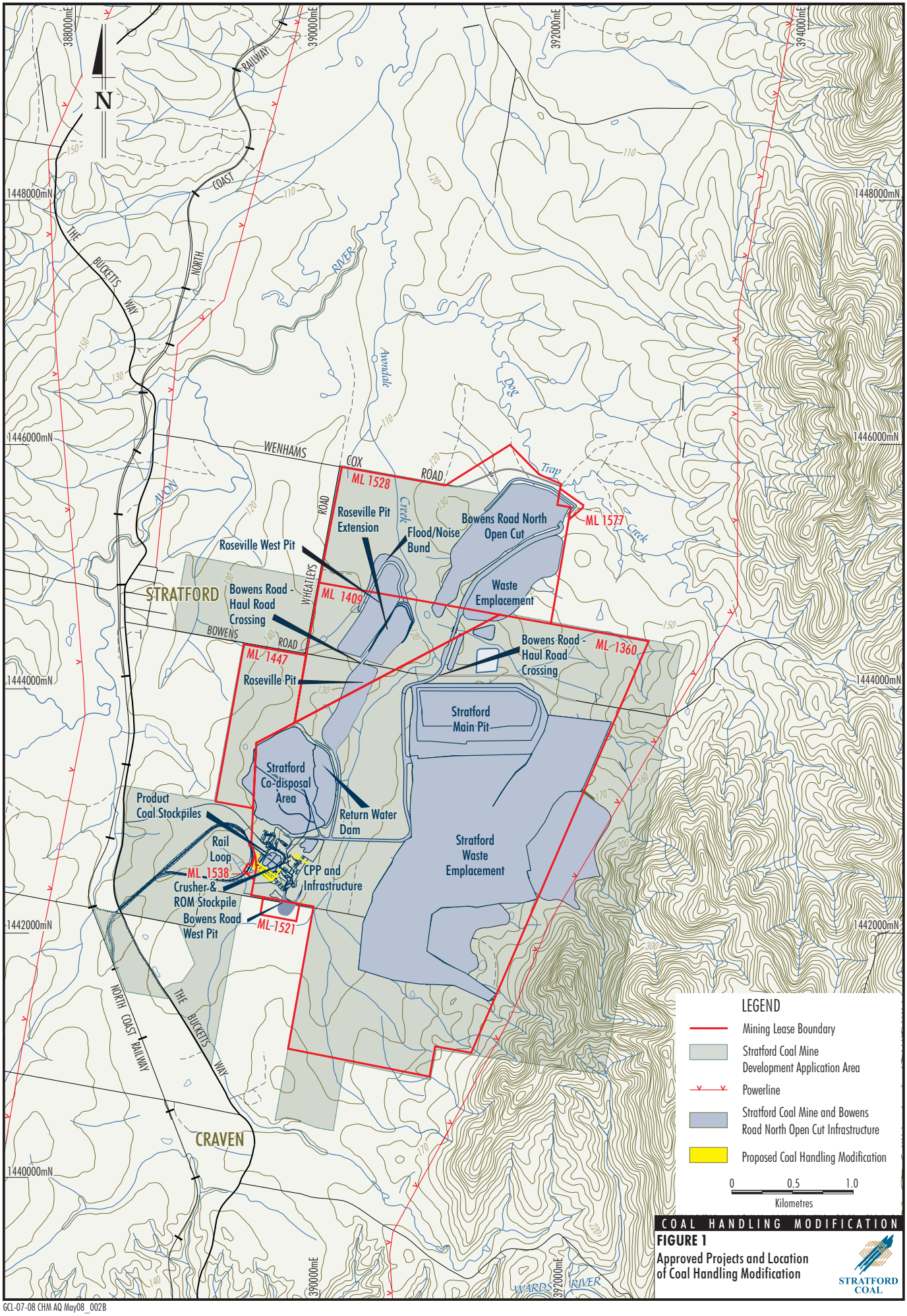
In summary, the proposed modifications would include:

- An additional ROM coal conveyor, stacker and storage area; and
- A product coal stockpile extension and associated additional product coal conveyors and coal reclaim systems.

A new ROM coal conveyor and storage area would allow raw coal (delivered by trains from Duralie) to be diverted onto a new fixed stacker, or to allow raw coal to continue on conveyor to the existing stacker at the ROM pad. This system would accommodate changes in raw coal types from Duralie more efficiently without the need to doze out the stacked ROM coal when changing coal type.

The new product stockpile would be created immediately to the south of the existing product stockpile area and would be capable of receiving approximately 60,000 tonnes (t) of coal without dozing. A fixed stockpile dust suppression system would be provided for as per the existing system. Coal from this stockpile would be reclaimed via four (4) vibrating activators and coal valves beneath the stockpile and would be transferred by conveyor to the existing conveyor to the train loading bin.

Figure 1 shows the scale of the proposed modifications. This figure shows that the proposed modifications are minor, relative to the approved developments. Figure 2 provides a close up view illustrating the arrangement of the proposed new product stockpile and ROM stacker. No changes are proposed to the consented SCM open cut mining operations. ROM and saleable coal production would remain unchanged from consented rates.



COAL HANDLING MODIFICATION

FIGURE 1

Approved Projects and Location of Coal Handling Modification

STRATFORD COAL

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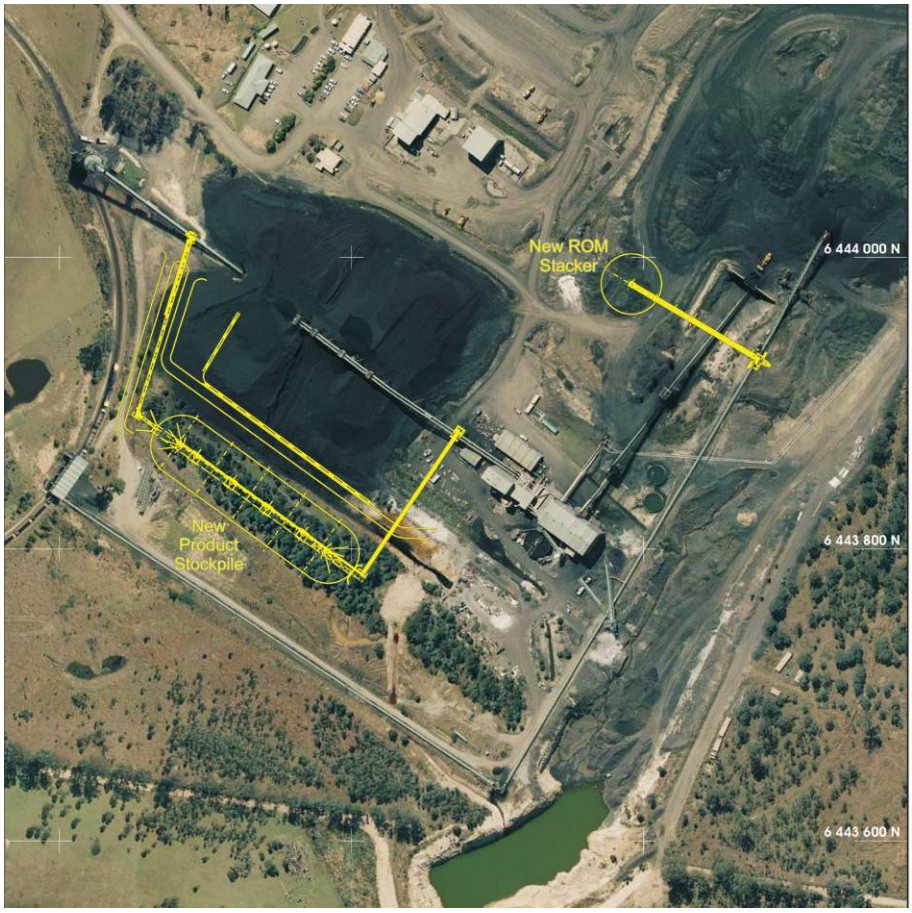


Figure 2. General Arrangement of the Proposed new Product Stockpile and ROM stacker

A quantitative assessment of the proposal has been carried out which included:

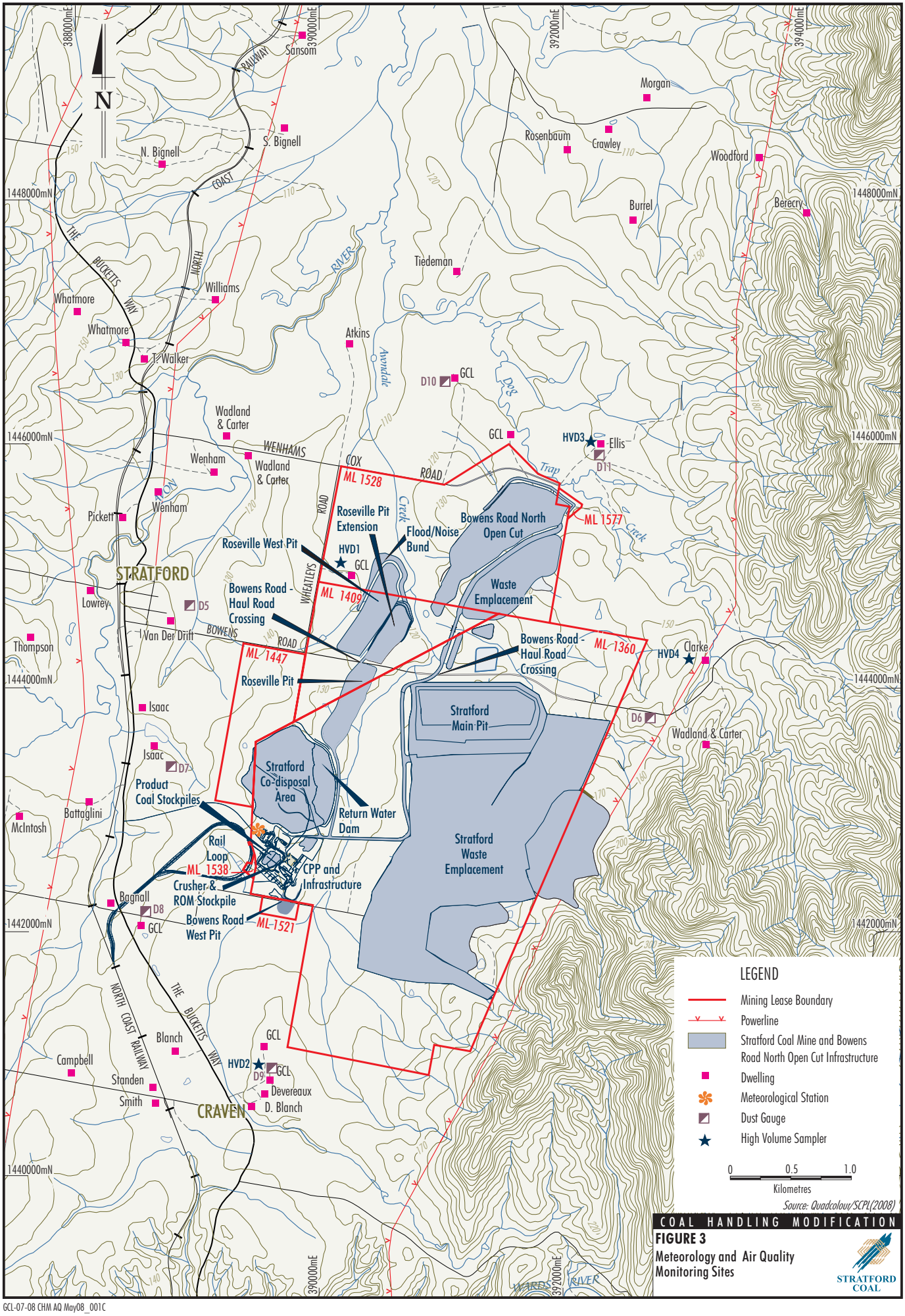
- Characterisation of existing air quality;
- Identification of potential new sources of dust;
- Estimation of potential dust emissions from new sources;
- Comparison of estimated additional dust contribution to the overall site emissions; and
- Assessment of the likely effect of the modifications to off-site air quality.

Assessment of the proposal is provided in the following sections.

2 EXISTING AIR QUALITY

The existing air quality can be characterised by particulate matter concentrations and deposition levels.

Seven (7) dust deposition gauges operate at various locations around SCM which collect dust fallout levels over periods approximating one month. In addition, there are four (4) high volume air samplers which measure PM_{10} concentrations every sixth day. The location of the dust deposition gauges and high volume air samplers are shown on Figure 3.



COAL HANDLING MODIFICATION

FIGURE 3

Meteorology and Air Quality Monitoring Sites

STRATFORD COAL

GCL-07-08 CHM AQ May08_001C

The Department of Environment and Climate Change (DECC) have specified criteria for dust fallout levels which are set to protect against nuisance impacts (Department of Environment and Conservation [now DECC], 2005). These criteria are 2 grams per square metre per month (g/m^2/month) as a maximum increase in dust deposition and 4 g/m^2/month as a maximum total dust deposition. Both criteria refer to an annual average.

Annual average dust deposition from data collected between 2001 and 2007 are presented in Table 1. Average dust deposition (insoluble solids) rates for all sites have been in the range of 0.4 to 3.7 g/m^2/month. Some monthly records from sites D7 and D10 were contaminated by bird droppings, insects and plant material and these records were excluded from the annual average calculations. Dust deposition in recent years (that is, between 2005 and 2007) has been below 2 g/m^2/month (all sources) at all gauges, suggesting good air quality.

Table 1 : Summary of measured dust deposition around SCM

Year	Annual average dust deposition (g/m^2/month)							DECC criteria
	D5	D6	D7	D8	D9	D10	D11	
2001	0.5	0.6	0.8[1]	3.2	1.0	3.7	-	4
2002	1.2	1.1	0.7	2.5	1.8	3.0	-	4
2003	1.0	0.7	1.2	1.2	1.8	-[1]	1.1	4
2004	0.5	0.6	0.5	1.0	1.2	1.4[1]	1.1	4
2005	0.7	0.6	1.4	0.8	0.8	0.6	1.0	4
2006	0.5	0.6	1.1	0.6	0.6	0.5	1.2	4
2007	0.4	0.5	1.1	0.8	0.4	0.5	1.0	4

[1] Excluding results contaminated by bird droppings, insects and plant material.

A measurement of the 24-hour average PM_{10} concentration is made every sixth day at four locations and a time series of the measurements from data collected since May 2001 is shown on Figure 4. Also shown on Figure 4 is the DECC assessment criteria for 24-hour average PM_{10} concentrations (that is, 50 micrograms per cubic metre [µg/m^3]). This is numerically equivalent to the National Environmental Protection Measure (NEPM) 24-hour average PM_{10} standard.

The monitoring results indicate that the highest 24-hour concentration was measured at the Ellis and Clarke residences, which both recorded a 24-hour average PM_{10} concentration of 120 µg/m^3 on 29 October 2003. The concentration at the Craven and Wheatleys Road (referred to as "Stratford" on Figure 3) monitors were 86 and 81 µg/m^3 respectively on the same day. SCM file notes indicate that a regional dust storm occurred on this day. In 2007, one measurement was above 50 µg/m^3 (56 µg/m^3 at the Ellis residence on 11 January 2007) and it was reported (SCM, 2007) that this was due to general smoke in the Gloucester Valley at the time.

Annual average PM_{10} concentrations for the most recent 12 months of available data (January 2007 to January 2008) at the four sites were 10, 10, 15 and 9 µg/m^3 at Wheatleys Road, Craven, Ellis residence and Clarke residence respectively. These results include the effects of dust emissions from mining that took place over the period as well as background levels. The measured levels are well below the DECC's assessment criteria of 30 µg/m^3 for annual average PM_{10}.

The results suggest that background PM_{10} levels, in the absence of mining, would be unlikely to exceed an annual average concentration of 10 µg/m^3. The results also indicate that current mining operations have caused only very small increases in the annual average PM_{10} concentrations at even the closest monitoring site (Ellis residence).

The monitoring data suggests that the SCM operations are complying with the short- and long-term assessment criteria for PM_{10}.

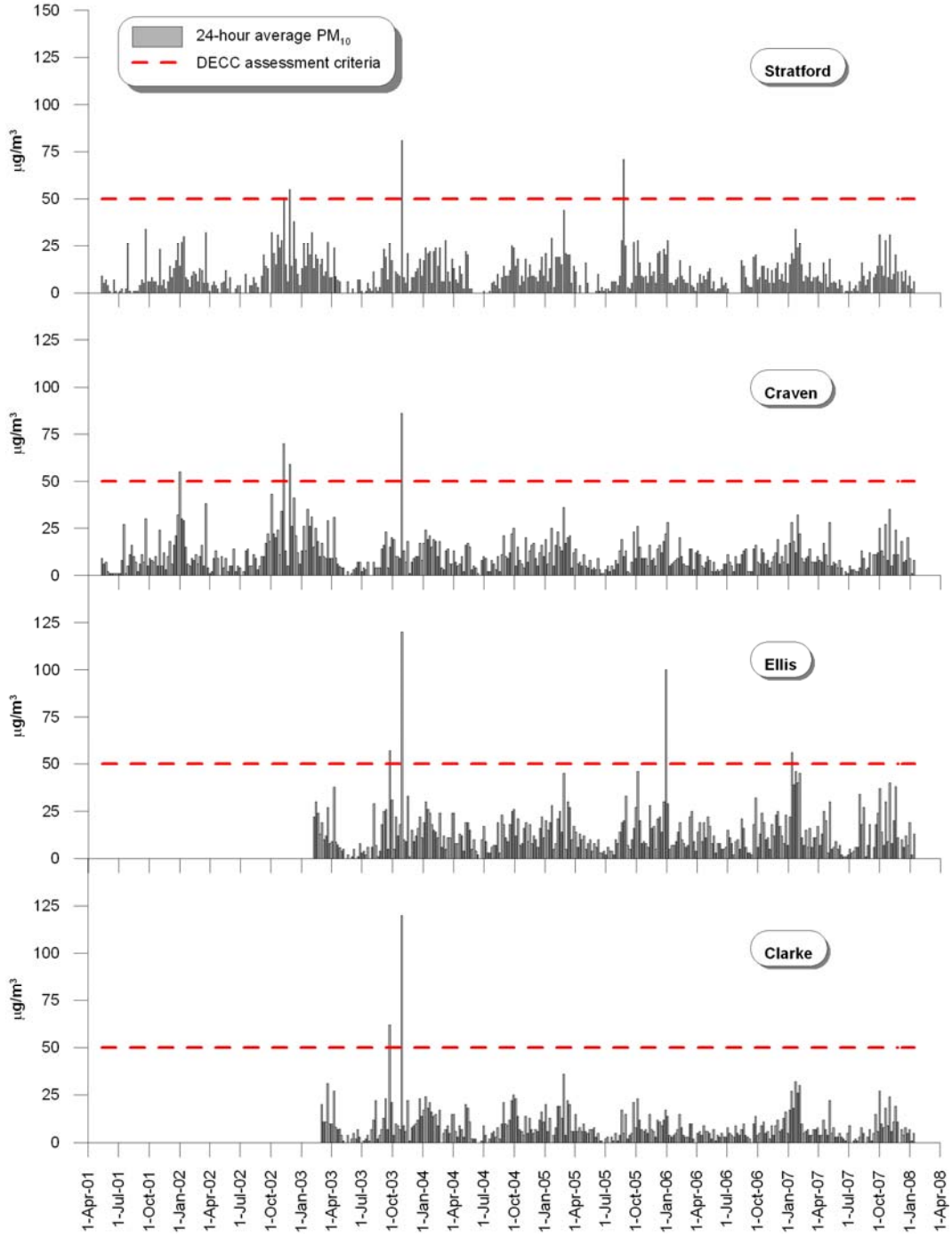


Figure 4. Time series of measured 24-hour average PM_{10} concentrations

In the last five years of complaint records (January 2003 to May 2008), only five dust-related complaints have been received by SCPL for the SCM and BRNOC operations.

Dust control measures currently employed at the SCM are detailed below.

Dust suppression water sprays operate at a number of locations in the CPP including the:

- ROM coal bin;
- crusher station;
- stamler feeder/breaker; and
- product coal stockpile.

In addition, six product coal stockpile sprays are located on the overhead conveyor system.

General relevant air quality management procedures used during mining operations include (SCPL, 2007c):

- regular watering of in-service haul roads in dry weather;
- generally restricting open areas that have the potential for dust generation;
- regular maintenance of hauls roads; and
- prompt rehabilitation of disturbed ground.

3 ESTIMATED DUST EMISSIONS

From examination of the proposed modifications, additional dust emissions would result from an overall increase in the size of exposed surfaces, represented by the new product stockpile and ROM stacker. There would be no increase in dust emissions from new loading points or conveyors since the quantity of coal handled would remain unchanged from consented rates.

Dust emissions (total suspended particulates or TSP) from the increased stockpile areas have been estimated by combining the estimated area of stockpiles with a TSP emission factor provided by the State Pollution Control Commission (SPCC, now known as the DECC). The TSP emission factor for wind erosion has a numerical value of 0.4 kilograms per hectare per hour (kg/ha/h) (SPCC, 1983).

The total exposed area of the new ROM stacker and product stockpiles is estimated to be less than 1 ha. Therefore, based on the SPCC emission factor provided above, the annual dust emission due to additional exposed stockpile areas would be approximately 3,504 kilograms per year (kg/y) [0.4 kg/ha/h x 1 ha x 8,760 hours per year]. Emissions from stockpiles could be reduced by 50% with the proposed use of water sprays as per the existing stockpiles. This dust mitigation measure would reduce the total emission to approximately 1,752 kg/y.

4 AIR QUALITY ASSESSMENT

The air quality effects of the cumulative operation of the SCM and Bowen's Road North Open Cut (BRNOC) were assessed in the Bowen's Road North Environmental Impact Statement (EIS) by Holmes Air Sciences (2000). The assessment concluded that no residences were predicted to experience dust deposition or concentration levels above the NSW Environmental Protection Authority (EPA, now DECC) assessment criteria for dust deposition or particulate concentrations. It was predicted that compliance with the short-term PM_{10} criterion of 50 $\mu g/m^3$ could be achieved with the implementation of an air quality management plan.

Subsequent air quality assessment of the proposed Roseville West Pit modification conducted in 2006 by Holmes Air Sciences indicated that the Roseville West Pit modification would comply with contemporary assessment criteria and would not significantly increase the cumulative emissions of BRNOC and SCM.

SCPL currently operates the SCM and BRNOC operations in accordance with the Air Quality Management Plan currently in place at the SCM and Roseville Extension Open Cut, and the BRNOC Dust Management Plan (SCPL, 2002). The Coal Handling Modification would be operated in accordance with these management plans.

From Section 3, the proposed modifications are estimated to result in an additional 1,752 kg/y of particulate matter (TSP) from the site. This can be compared with estimates made by Holmes Air Sciences (2000) which suggested that the approved SCM and BRNOC would produce up to 1,640,238 kg/y[1] of TSP. Therefore, the additional dust emissions from the proposed modifications (1,752 kg/y, as estimated in Section 3) would represent less than 1% of the approved site emissions.

Given the low contribution to the overall site emissions, it is concluded that the proposed modifications would not result in any measurable changes to air quality at nearest privately-owned residences. Notwithstanding, SCPL would apply the same dust suppression measures (for example, water sprays) to the new stockpiles and conveyors.

Dust generated by CPP operations would also potentially be reduced due to improved coal separation and reduced dozer operations at the CPP.

5 CONSTRUCTION IMPACTS

Construction of the new product stockpile, ROM stacker and associated infrastructure would occur for approximately 9 months and would involve some earthworks. The earthworks have the potential to cause additional dust emissions if not properly managed.

Potential air quality impacts during construction would largely arise from wheel generated dust, wind erosion and surface shaping activities. The total amount of dust generated would depend on the silt and moisture content of the soil, the exposed areas, frequency of water spraying and speed of machinery.

It is useful to identify the dust generating activities as well as the mitigation measures that can be implemented to minimise dust emissions. Table 2 lists some of the control procedures that could be employed for various construction activities. These control measures should ensure that there are no off-site air quality impacts during the construction period.

Table 2 : Summary of possible dust control measures for the construction period

Source	Dust control measure(s)
Dust from exposed areas	Disturb only the minimum area necessary for construction.
Dust from traffic on unsealed road surfaces	Watering of trafficked areas. Imposition of speed limits on unsealed surfaces.

In addition, it may be necessary to reduce the level of construction activity during weather conditions conducive to high dust generation. These conditions would include dry days with high winds.

6 CONCLUSIONS

In terms of dust emissions the proposed modifications are minor in nature (particularly with respect to the scale of the approved SCM and BRNOC operations shown on Figure 1) and it is concluded that there would not be any significant increase the cumulative air quality emissions of SCM and BRNOC.

A review of recent monitoring data indicates that the SCM and BRNOC operations are complying with applicable air quality assessment criteria and compliance with these air quality criteria would be expected to continue under the proposed Coal Handling Modifications.

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[1] It is noted that the SCM main pit is no longer an operational mining area and hence current total dust emissions would be expected to be lower than the maximum level predicted in the BRNOC EIS.

that there would not be any significant increase the cumulative air quality emissions of SCM and BRNOC.

A review of recent monitoring data indicates that the SCM and BRNOC operations are complying with applicable air quality assessment criteria and compliance with these air quality criteria would be expected to continue under the proposed Coal Handling Modifications.

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Closure
Please feel free to contact me if you need to discuss any of the above.

Yours faithfully,
Holmes Air Sciences

Shane Lakmaker
Senior Environmental Scientist

References

Holmes Air Sciences (2000)
"Air quality impact assessment: Bowens Road North Open Cut – Stratford Coal Mine, Stratford NSW". Prepared by Holmes Air Sciences for Stratford Coal Pty Ltd, December 2000.

Holmes Air Sciences (2006)
"Air Quality Assessment – Roseville West Pit Modification". Letter report from Nigel Holmes to Graham Colliss, dated 4 October 2006.

SPCC (1983)
"Air pollution from coal mining and related developments".

Stratford Coal Mine (2007)
"Annual Environmental Management Report". June 2007.