

DIVISION OF RESOURCES & GEOSCIENCE ADVICE RESPONSE

Jack Murphy
Resource & Energy Assessments - Planning & Assessment Division
Department of Planning, Industry and Environment
GPO Box 39
SYDNEY NSW 2001

jack.murphy@planning.nsw.gov.au

Dear Jack

Project: Russell Vale Revised Underground Expansion Project
Stage: Revised Preferred Project Report and Response to Second PAC Review
Development Application: MP 09_0013

I refer to your correspondence dated 30 July 2019 inviting the Division of Resources & Geoscience (Division) to provide comments on the *Russell Vale Revised Underground Expansion Project* (Project). This advice considers the Revised Preferred Project Report and Response to Second PAC Review (RPPR) submitted by Wollongong Coal Limited (Wollongong Coal or the Proponent).

The relevant units of the Division have been consulted in generating this advice. The Department of Planning, Industry and Environment – Planning and Assessment Division and the Proponent should be aware that matters pertaining to rehabilitation, environmental impacts of final landform design, mine operator and safety are not assessed by the Division. Reference should be made to the response from the NSW Resources Regulator on these matters.

Advice overview

The Division has determined that the Proposal will:

- enable operations at the currently not producing Russell Vale Colliery (Russell Vale) to recommence for a period of five years (commencement date dependent on the timing of an approval, if an approval is granted).
- enable extraction of approximately 3.7 million tonnes (Mt) of Run-of-Mine (ROM) coal over 5 years at a production rate that will not exceed 1 Mt of product coal per year
- improve resource recovery and be an efficient use of resources.
- ensure an appropriate return to the state with \$30.6 million royalties (current dollars)
- generate total revenue (value of coal produced) of \$434 million (current dollars); and
- provide employment for a workforce of 205 personnel at Russell Vale for five years.

The Division estimates that these direct mine jobs would result in approximately 800 additional indirect jobs in both mine and non-mine related services.

Resource and Economic Assessment

The Project will extract the Wongawilli Seam from the Illawarra Coal Measures. The Wongawilli Seam has a range of coal properties that make it ideal for blending with the Bulli Seam. The coal properties include high vitrinite content, high fluidity, low phosphorous and high grindability. The Wongawilli Seam is high in ash content and requires beneficiation for use as a metallurgical coal. Beneficiation of this coal usually yields a split of thermal coal and coking coal. The proportion of thermal coal increases as raw ash content increases.

A review of coal quality data and operational history confirms the Wongawilli Seam at Russell Vale can be exported as a coking coal product. The target product qualities, markets and sale prices will largely be driven by the efficiency of the proposed processing facility and the market for high ash content coking coal.

Many factors constrain the mine plan and extraction method within the Project area and therefore constrain resource recovery. These include geological & geotechnical features, subsidence sensitive surface features (environmental/infrastructure), commercial viability and existing workings.

The Wongawilli Seam ranges up to about 10 metres thick across the Southern Coalfield and contains numerous bands of non-coal partings. The economic working section of the Wongawilli Seam targeted by coal operations is the basal 2 to 5 metres, being the lowest ash content portion of the seam. Wollongong Coal proposes a mining height of about 2.4 metres in the basal section of the Wongawilli Seam. Coal resources will be left in the immediate mining roof in order to manage the geotechnical and safety constraints associated with the place change mining method.

In view of the constraints outlined in the Proponent's RPPR and based on the information currently available, the Division considers the Project satisfies section 3A objects of the *Mining Act 1992* and the requirements of clause 15 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007. The Project represents an efficient development and utilisation of coal resources which will foster significant social and economic benefits.

The Division is generally satisfied that, should the operational outcomes be achievable, the proposed mine design and mining method submissions adequately recover coal resources and will provide an appropriate return to the state.

The Division notes that Wollongong Coal has not yet completed coal reserve estimation for the Project in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC code). The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves. Reserves are the economically mineable portion of a resource. A JORC compliant reserves report for the Project would independently assess the commercial viability of the Project and the proposed place change mining method.

The Division recommends the Planning & Assessment Division request the Proponent to provide a reserves report for the Project, completed in accordance with the JORC code. This approach is consistent with previous instances when the JORC reserves report has not been made available at this point in the assessment process.

The resource utilisation and economic benefits assessment undertaken by the Division is addressed in Attachment A.

Application of section 380AA of the *Mining Act 1992* – restrictions on planning applications for coal mining and titles required to undertake mining

Coal is a prescribed mineral under the Act and the Proponent is required to hold appropriate mining titles from the Division to undertake mining.

Section 380AA states:

(1) An application for development consent, or for the modification of a development consent, to mine for coal cannot be made or determined unless (at the time it is made or determined)

the applicant is the holder of an authority that is in force in respect of coal and the land where mining for coal is proposed to be carried out, or the applicant has the written consent of the holder of such an authority to make the application.

(2) For that purpose, an authority in respect of coal need not be in force in respect of the whole of the land to which the application for development consent relates but must be in force for the land where mining for coal is proposed.

Based on current title information the Division advises that the Proponent holds the appropriate titles as required for planning applications for coal as relating to the Project and satisfies the requirements of section 380AA.

The requirement for a mining authorisation and royalty liability

Based on current title information the Division advises that the Proponent holds the appropriate titles as required to undertake extraction operations as relating to the Project should it be approved (see attachment B).

Furthermore, the holder of a mining lease is also liable to pay royalty for both publicly and privately-owned minerals (refer to section 282-285 of the Act).

Biodiversity offset assessment

The Division requests that the Proponent consider potential resource sterilisation should any future biodiversity offsets areas be considered. Further, that the Proponent consult with the Division and any holders of existing mining or exploration authorities that could be potentially affected by the proposed creation of any such biodiversity offsets, prior to creation occurring. This will ensure there is no consequent reduction in access to prospective land for mineral exploration or potential for the sterilisation of mineral and extractive resources.

Summary of review

The Division has determined that should the project be approved; efficient and optimised resource outcomes can be achieved, and any identified risks or opportunities can be effectively regulated through the conditions of mining authorities issued under the *Mining Act 1992*.

The Division requests to review the draft conditions of approval before finalisation and any granting of development consent.

For enquiries regarding this matter, contact Adam Banister, Senior Advisor Assessment Coordination on 02 4063 6601 or assessment.coordination@planning.nsw.gov.au.

Yours sincerely



Dr David Blackmore
A/Executive Director Resource Operations
Division of Resources & Geoscience
29 August 2019

Encl.

Attachment A - Russell Vale Revised Underground Expansion Project - Resource & Economic Assessment (DOC19/645776)

Attachment B - Russell Vale Revised Extension Project - Diagram (DOC19/736789)



Planning,
Industry &
Environment

DOC19/645776

Russell Vale Revised Underground Expansion Project (MP 09_0013)

Resource & Economic Assessment

Division of Resources & Geoscience

August 2019



Published by NSW Department of Planning, Industry and Environment

dpie.nsw.gov.au

Title: Russell Vale Revised Underground Expansion Project (MP 09_0013)

Subtitle: Resource & Economic Assessment

File reference: DOC19/645776

More information

Assessment Coordination Unit, Resource Assessments – Division of Resources & Geoscience

assessment.coordination@planning.nsw.gov.au or 02 4063 6534

© State of NSW through Department of Planning, Industry and Environment 2019. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Planning, Industry and Environment as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2019) and may not be accurate, current or complete. The State of NSW (including the NSW Department of Planning, Industry and Environment), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Contents

Executive summary	2
Introduction	3
Project Overview.....	4
Size and quality of the resource	5
Resource recovery.....	6
Economic benefits of the resource	7
Coal royalty calculation.....	8
Approvals	9

Executive summary

Determination

The Division of Resources and Geoscience (the Division) assessed the Russell Vale Revised Underground Expansion Project (the Project or Proposal).

The Division determined the Project will:

- ensure operations at the currently not producing Russell Vale Colliery (Russell Vale) would re-commence for a period of five years (commencement date dependent on the timing of an approval, if an approval is granted).
- improve resource recovery and be an efficient use of resources.
- ensure an appropriate return to the NSW Government including;
 - \$30.6 million royalties (current dollars)
 - \$434 million total revenue (current dollars)
- provide employment for a workforce of 205 personnel at Russell Vale for five years.

The project

In order to address residual uncertainty regarding the impacts of longwall mining raised by the Planning Assessment Commission Second Review Report, a revised mine design has been developed by Wollongong Coal Limited (Wollongong Coal or the Proponent) based on a non-caving first workings mining system. The revised mine plan has been designed to be long term stable with reduced risk of pillar failure to address potential subsidence-related mining impacts on groundwater, surface water and biodiversity within the Cataract Reservoir catchment.

Main components of the Project include:

- mining by means of first working mining techniques only, with the workings designed to be long term stable with minimal subsidence impacts. No longwall mining is proposed.
- extraction of approximately 3.7 million tonnes (Mt) of Run-of-Mine (ROM) coal over 5 years at a production rate that will not exceed 1 Mt of product coal per year.
- construction and use of a coal processing plant to improve the quality of product coal.
- redesign of the Pit Top layout to strategically relocate infrastructure to more shielded locations.
- reduced hours of operation for surface facilities relative to the Preferred Project mine plan.
- additional noise mitigation works at the Russell Vale Pit Top including a new noise barrier, extension to the height of existing bunds and acoustic treatment of coal processing infrastructure.

Introduction

State significant development is regulated under the *Environmental Planning and Assessment Act 1979*, which requires a proponent to apply to the Department of Planning and Environment for development consent, supported by in this case the Revised Preferred Project Report and Response to Second PAC Review (RPPR).

This Resource & Economic Assessment conducted for the Project by the Division assessed:

- the social and economic benefits to NSW including royalties, capital investment, revenues and jobs.
- the resource/reserve estimates stated in the proponent's RPPR.
- if the Proposal is an efficient development of the resource, that resource recovery is optimised and waste minimised.
- if the Proposal will provide an appropriate return to NSW.

The objects of the *Mining Act 1992* are to encourage and facilitate the discovery and efficient development of mineral resources in NSW.

Of particular relevance to this Resource & Economic Assessment are section 3A Objects:

- to recognise and foster the significant social and economic benefits to NSW that result from the efficient development of mineral resources.
- to ensure an appropriate return to the State from mineral resources.

The relevant section of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 is Part 3, Clause 15: Resource Recovery requires that resource recovery is efficient, optimised and minimises waste.

Project Overview

Mine history

Wollongong Coal owns two underground metallurgical coal mines, Russell Vale Colliery (Russell Vale) and Wongawilli Colliery. Both are in the Illawarra region of the Southern Coalfield and both are on care and maintenance.

Mining in this region commenced in the late 1880's. Russell Vale has extracted coal from the Bulli, Balgownie and Wongawilli seams using various underground methods (Longwall, bord and pillar). Mining at Russell Vale ceased in 2015 when mining consent expired. Wollongong Coal proposed various extensions to sustain and expand mining operations at Russell Vale prior to 2015. None of these proposals were approved.

The proposed Russell Vale Revised Underground Expansion Project

The Project proposes to recommence mining the Wongawilli Seam at Russell Vale.

The Project proposes to recommence mining for a five-year period. The proposed operation is an underground, bord and pillar mine using the place change mining method. The place change mining method was selected to improve operational efficiency, reduce costs, minimise surface subsidence and maximise production rates.

The Project will utilise existing mine infrastructure and transport facilities. A small coal processing facility is planned to be constructed to beneficiate Run-of-Mine (ROM) coal.

Size and quality of the resource

Resource size

The Division has verified that the Project will provide about 3.7 million tonnes (Mt) of ROM coal which will produce around 3.1 Mt of product coal.

The Proponent has completed the coal resource estimation for the Project in accordance with the Australasian Code for Reporting Exploration results, Mineral Resources and Ore Reserves (the JORC Code). The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves.

The Proponent has not yet completed coal reserve estimation for the Project in accordance with the JORC code. Reserves are the economically mineable portion of a resource.

The Project represents a very small portion of the large underground coking coal resource at Russell Vale. Coal resources in the Bulli and Wongawilli seams outside the Proposal area extend westward and are significant long-term exploration targets.

Resource quality

The Project will extract the Wongawilli Seam from the Illawarra Coal Measures. The Wongawilli Seam has a range of coal properties that make it ideal for blending with the Bulli Seam. These are high vitrinite content, high fluidity, low phosphorous and high grindability.

The Wongawilli Seam is high in ash content and requires beneficiation for use as a metallurgical coal. Beneficiation of the Wongawilli Seam usually yields a split of thermal coal and coking coal. The proportion of thermal coal increases as raw ash content increases.

Russell Vale mine proposes to extract the low ash, basal section of the Wongawilli Seam. The ROM coal will be crushed, screened and then subject to a simple beneficiation process. Wollongong Coal estimate the beneficiation process will reduce the ROM coal ash by about 8% with a yield of about 80%. Project ROM ash is expected to range from about 28 - 32%.

The product coal requires additional beneficiation or blending to meet hard coking coal benchmarks (typically less than 10.5% ash content). The product coal from the Proposal would therefore receive a significant discount to the prevailing export hard coking coal price.

Wollongong Coal expects to have the coal processing facility constructed after one year of operation. Prior to this all coal will be sold as ROM coal.

A review of coal quality data and operational history confirms the Wongawilli Seam at Russell Vale can be exported as a coking coal product. The target product qualities, markets and sale prices will

largely be driven by the efficiency of the proposed processing facility and the market for high ash content coking coal.

Resource recovery

Wollongong Coal assessed several mine designs and mining methods at Russell Vale. The current Project represents a small portion of the larger coal resource at Russell Vale, but will not impact the potential future development of those resources. Wollongong Coal determined a bord and pillar mine design, using the place change mining method, was most appropriate.

Many factors constrain the mine plan and extraction method within the Proposal and therefore constrain resource recovery. These include geological & geotechnical features, subsidence sensitive surface features (environmental/infrastructure), commercial viability and existing workings.

Secondary extraction techniques such as longwall mining would increase resource recovery at the of the Project. However, Wollongong Coal considers this mining method inappropriate given the subsidence sensitive surfaces constraints within the Proposal area. In order to recover coal, a first workings only proposal was developed.

First workings, bord and pillar extraction is designed to have no measurable subsidence and be stable in the long term. This mining method also ensures flexibility in mine operations to manage subsidence sensitive surface features. In areas where approval for secondary extraction is unlikely to be granted, first workings bord and pillar operations represent the only viable option to recover coal resources.

The Wongawilli Seam ranges up to about 10 metres thick across the Southern Coalfield and contains numerous bands of non-coal partings. The economic working section of the Wongawilli Seam targeted by coal operations is the basal 2 to 5 metres. This is the lowest ash content portion of the Wongawilli Seam.

Wollongong Coal proposes a mining height of about 2.4 metres in the basal section of the Wongawilli Seam. Coal resources will be left in the immediate mining roof in order to manage the geotechnical and safety constraints associated with the place change mining method.

The Bulli and Balgownie seams overlie the Wongawilli Seam. Coal resources from these seams have been extensively extracted within the Project area meaning these resources will not be sterilised by this proposal. No additional coal seams with potential commercial viability overlie the Wongawilli Seam.

Resource recovery is adequate considering the project constraints

Given the constraints outlined in Wollongong Coal's RPPR, the Division considers the Project to adequately recover coal resources and provide an appropriate return to the State.

Economic benefits of the resource

Over the life of the Project, assuming the majority of production would be sold on the export metallurgical market, the Division has estimated that the value of the coal produced would be around \$434 million in current dollars, with the net present value (NPV) of this revenue stream of around \$362 million at a real discount rate of 7%.

Export income is vital for the health of both the NSW and Australian economies. Export income also contributes to the Nation's balance of trade, which provides benefits to both the state and Australian credit ratings, plus it generally has a positive impact on the value of the Australian dollar exchange rate. If approved, the additional export income from the Project would contribute to the around \$19.7 billion (2017-18 total) of coal exports annually from NSW. Coal exports are the largest value export from NSW, representing around 45% of the state's merchandised goods exports.

The Project, if approved, would provide up to 205 full time operational jobs (full time employees and contractors) from 2021 to 2025. The Division estimates that these direct mine jobs would result in around an additional 800 indirect jobs in both mine and non-mine related services. Initial capital investment for the Project would be of the order of \$35 million.

The Division also notes from the RPPR prepared by Umwelt, on behalf of the Proponent, that the Project would deliver a net benefit to NSW in NPV terms of \$174 million.

Coal royalty calculation

The Project is a proposed underground mine where all production would take place at depths of less than 400m, therefore a royalty rate of 7.2% applies to all saleable production. This rate is applicable to the net disposal value. Net disposal value is the price received per tonne minus any allowable deductions. The main allowable deduction is for coal beneficiation, which is either \$3.50 per tonne for coal subjected to a full washing cycle, \$2.00 per tonne for coal subjected to a simple washing process, or \$0.50 per tonne for coal that is washed and screened.

As a majority of ROM coal from the operation would be subject to a simple washing process, a deduction of \$2.00 per tonne from the value of coal produced applies. A deduction for levies also applies which would amount to no more than \$1.00 per tonne. Hence allowable deductions for royalty for the Project are \$3.00 per tonne.

One of the most important assumptions in the calculation of future royalty is the estimate of a future coal price over the life of a project. The majority of coal from the Project is expected to be sold into the export metallurgical market. A review of coal quality information by the Division suggests this is achievable.

Coal price forecasting is inherently difficult and over the project life variations in coal prices are expected. An average price of around A\$140 per tonne for export metallurgical coal from the Project has been used by the Division. Any product coal that would be sold from the Project is not premium quality hard coking coal which would attract a significantly higher price than A\$140 per tonne. Any coal produced from the Project would be subject to a significant discount to the prevailing export hard coking coal price, the quantum of this discount is arguable. The Division has used a conservative discount to arrive at the A\$140 per tonne coal price for the life of the Project.

Another important aspect of future royalty calculation for a proposed coal project is estimation of future annual production. The Division has used the Proponent's stated production schedule in its royalty calculations, and if the Project is approved, around 3.1 Mt of product coal would be mined from the Project.

Using the above parameters, the Division has calculated that the State would receive around \$30.6 million in current dollars, and around \$25.5 million in NPV terms (real discount rate of 7 percent) in royalty from the Project. In a typical year at full production the NSW Government would receive around \$8 million in royalties from the Project. These totals would only be achieved if the Project is approved.

Approvals

Approved by	Signature	Date
Approving Officer: Dr Kevin Ruming Director Strategic Resource Assessment & Advice		26/08/2019
Approving Officer: Tamsin Martin Director Resources Planning & Programs		26/08/2019
Endorsing Officer: Dr David Blackmore A/Executive Director Resource Operations		29/08/2019

RUSSELL VALE EXTENSION PROJECT DEVELOPMENT APPLICATION IDENTIFICATION

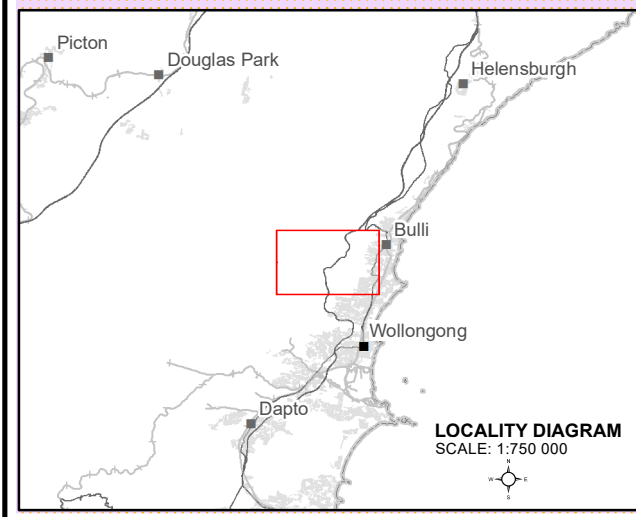
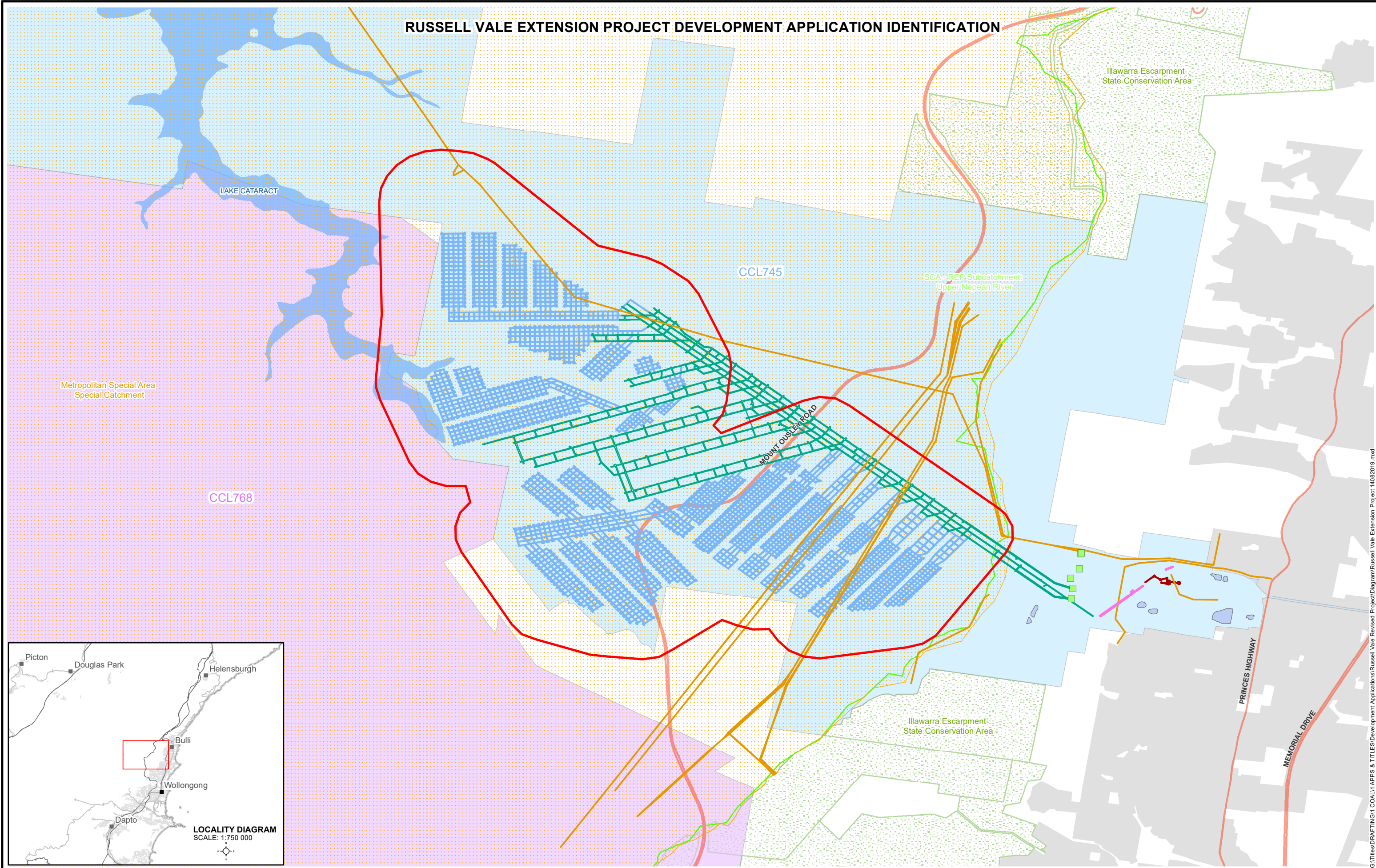


DIAGRAM: 09_0013

- | | | | | |
|---------------|--------------------------|-------------------------|------------------------|---------------|
| Project Site | Powerlines | Proposed RVS CHPP | SCA - Special Area | CCL745 (1973) |
| Portals | Wongawilli Seam Workings | Site Dams | SCA - REP Subcatchment | CCL768 (1973) |
| Conveyor Belt | UEP Mine Extraction Area | State Conservation Area | Water Body | |

Development Application No.: 09_0013 (CM9: EF19/18874)
 Project/Operation: Russell Vale Colliery – Revised Underground Expansion Project
 Applicant: Wollongong Coal
 Prepared and extracted from TAS by
 M. Grainger 14/08/2019
 RESOURCE OPERATIONS
 SPATIAL SERVICES

0 0.25 0.5 0.75 1
kilometres

NSW GOVERNMENT
SPATIAL SERVICES
RESOURCE OPERATIONS

G:\Titles\Drafting\1 COAL\1 APPS & TITLES\Development Applications\Russell Vale Revised Project\Diagram\Russell Vale Extension Project 14082019.mxd