



OUT14/15843

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Dear Ms Kirton

**Angus Place Mine Extension Project  
Environmental Impact Statement**

I refer to your email of 11 April 2014 regarding the application by Centennial Angus Place Pty Ltd for its Angus Place Mine Extension Project.

NSW Trade & Investment, Regional Infrastructure & Services, Division of Resources & Energy (DRE) has reviewed the *Angus Place Mine Extension Project Environmental Impact Statement (EIS) dated April 2014* and provides the following comments which are directed at specific areas of DRE's responsibility for this proposal.

DRE is satisfied that the Angus Place Mine Extension Project, as outlined in the EIS will effectively utilise the valuable energy resources within Angus Place Colliery. Expected environmental impacts have been assessed and are considered to be acceptable. Community impacts are expected to be relatively low and are broadly consistent with existing operations. Economic and employment benefits will be significant, particularly on a regional level.

**PROJECT DESCRIPTION**

The Project comprises the continuation, upgrade and extension of underground coal mining operations and surface facilities at the Angus Place Coal Mine. The company is applying to extend mining to the east of the current workings for another 25 years in order to provide coal to the two local power stations and other domestic and international customers. The mine employees approximately 300 fulltime workers and contractors.

The mine design has been planned to minimise impacts to sensitive surface features, including avoiding these features where feasible

## **MINING TITLE**

As coal is a prescribed mineral under the *Mining Act 1992*, the proponent is required to hold appropriate mining titles from DRE in order to mine this mineral. The project area is within exploration and mining titles held by the company. The company must ensure that an appropriate mining title must be held to cover areas to be mine and the project's supporting infrastructure and mining purpose activities to be conducted.

It should be noted that a Mining Lease cannot be granted without a relevant approval under the *Environmental Planning and Assessment Act 1997*.

Under the *Mining Act 1992*, mining and rehabilitation are regulated by conditions included in the mining lease, including requirements for the submission of a Mining Operations Plan (MOP) and a Subsidence Management Plan (SMP) prior to the commencement of operations, and subsequent Annual Environmental Management Reports (AEMR).

The proponent should be aware that ESG3: Mining Operations Plan (MOP) Guidelines dated September 2013 are available on the DRE website at: [http://www.resourcesandenergy.nsw.gov.au/data/assets/pdf\\_file/0009/475434/ESG3-Mining-Operations-Plan-MOP-Guidelines-September-2013.pdf](http://www.resourcesandenergy.nsw.gov.au/data/assets/pdf_file/0009/475434/ESG3-Mining-Operations-Plan-MOP-Guidelines-September-2013.pdf)

## **SUBSIDENCE**

DRE's advice in relation to proposed longwall operations at Angus Place for the extension project is relevant only to mine subsidence issues related to built features, public safety and potential instability of cliff formations or steep slopes.

After reviewing the EIS, DRE is of the view that risks of mine subsidence related to the above-mentioned subsidence issues are similar to those at the mine's current mining operation and should be manageable through the Extraction Plan process.

## **SITE DESCRIPTION**

### Geology and Hydrogeology

Newnes Plateau Geology Related to Swamp Formation. The Burrellow Formation has been identified as the main source for the formation of the swamps of the Newnes Plateau due to the layers of fine grained siltstones, claystones and shales which were found to be acting as aquatards. This formation has a maximum thickness of 110m. This formation creates perched aquifers that are hydraulically independent from the underlying regional aquifer system.

The shallow groundwater system is within the Bankswall Sandstone unit and is underlain by the Mount York Claystone which acts as the aquitard for vertical groundwater movements within this strata. The deep groundwater system lies within the Illawarra Coal Measures. It is this system that creates the mine water inflows as it is drained from the goaf.

Analysis of past mining impacts on the swamps indicate that the greatest impacts recorded were results of the 9 years of mine water discharges through the swamps. This cause significant changes in the hydrological regime within the swamps leading to erosion, dieback, increased sediment loads, and changes to swamp soil water chemistry. This mine water discharge has since ceased into the Newnes Plateau Catchment.

Other impacts include the loss of surface flows in East Wolgan Swamp through a cavity caused by the dilation of a geological fault. Water is believed to have gone into the shallow groundwater water table but not below the Mount York Claystone (into the deep groundwater zone) or mine workings. Infilling and recovery of water levels have been reported to occur.

East Wolgan Swamp remediation works have been undertaken in 2014. Coir logs, sand bags and weirs used to aid swamp rehydration works. Direct seeding and brush matting has also been used. This type of remediation will help with surface flows but will not address the loss of water through the cracked/faulted substrate.

Kangaroo Creek Shrub Swamp Hydrology – mining impacts recorded at KC1 through a sudden drop in water level following the passage of the longwall. It has been reported in the EIS that the impacts were a results of a combination of factors including

- Mine design
- Geological structures (Kangaroo Creek Lineament
- Valley slope angles >18 degrees
- Swamp proximity to longwall panels.

Mine design for the Angus Place extension project has avoided the combination of factors which caused these historical impacts. These mine design changes include reducing the ratio of longwall mining void width to depth of cover to ensure sub-critical subsidence behaviour.

#### Land Preparation

To accommodate increased water make into the mine, up to 15 boreholes have been proposed to aid in dewatering. A construction footprint of 90m x 110m has been proposed for each bore site. DRE considers that the footprint should be reduced as much as practical. Specific details of the planned clearing and footprint with associated plans need to be provided to DRE for review. Angus Place should rationalise the proposed dewatering boreholes to ensure a minimal disturbance on the Newnes Plateau. This rationalisation should include putting more than 4 Boreholes on each pad in order to reduce the number of pads and clearing required.

### Watercourses

The nearest Longwall to the Wolgan River is LW1002 at 240m. LW 1019 will be 400m from Carne Creek. The predicted subsidence and tilting of these watercourses are not expected to result in any stream bed cracking or loss of surface waters.

The proposed monitoring will rely on upstream and downstream monitoring on these two watercourses. Pool depth monitoring of the key pools in the watercourses should also be undertaken to confirm these predictions.

### **RECOMMENDED CONDITIONS**

DRE recommends the following conditions to be incorporated into any development consent that may be granted for this proposal:

#### **Exploration**

Proposed exploration activities must be notified to DRE and, where applicable, to the Forestry Corporation of NSW including copies of due diligence assessments and site assessments where available. Exploration must not commence until appropriate approvals and/or consents have been obtained from these agencies.

#### **Monitoring of Swamp and surface/shallow groundwater impacts**

The Proponent should review the current monitoring program to ensure it is in line with the principles of Before-After/Control-Impact (BACI) monitoring approach with the focus on ensuring this approach is consistent and clearly identifiable in the reporting of monitoring data. Control sites should be identified and chosen to best represent the impacted sites (similar hydrological conditions). Control sites should be used for surface water (flow and quality) and shallow groundwater within swamps and water courses.

A review of the planned monitoring of the swamps within the project area should be undertaken to ensure sufficient data capture is available to assess the full extent of the groundwater interactions down and across the swamp profile (multiple piezometers in each swamp). Monitoring focus should also include the AQ3-AQ6 (Burrallow Formation) strata using multilevel piezometers with hourly readings. Where multi-level piezometers are not used within the swamps the instrument should be placed at a depth greater than 3m within the swamp profile to avoid historical issues with loss of data due to hole being too shallow. This monitoring should also be reflected in the control sites selected (as indicated above).

Pool depth monitoring of the key pools on the Wolgan River and Carne Creek should also be undertaken to confirm the predictions of no loss of flow/water pooling.

#### **Infrastructure**

The proponent shall undertake the rationalisation of the proposed dewatering boreholes (currently 15) to ensure minimal disturbance on the Newnes Plateau.

## Rehabilitation Objectives and Commitments

The Proponent shall rehabilitate the site to the satisfaction of the Secretary of the Department of Trade and Investment, or his delegate.

Rehabilitation must be substantially consistent with the Rehabilitation Objectives described in the EIS, the Statement of Commitments in Chapter 11 of the EIS and the following objectives in Table 1.

Table 1

Rehabilitation Feature	Objective
Mine site (as a whole of the disturbed land and water)	Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s).
Rehabilitation materials	Materials (including topsoils, substrates and seeds of the disturbed areas) are recovered, appropriately managed and used effectively as resources in the rehabilitation.
Landforms	<p>Final landforms sustain the intended land use for the post-mining domain(s).</p> <p>Final landforms are consistent with and complement the topography of the surrounding region to minimise the visual prominence of the final landforms in the post mining landscape.</p> <p>Final landforms incorporate design relief patterns and principles for consistent with natural drainage.</p>
Water Quality	<p>Water retained on site is fit for the intended land use(s) for the post-mining domain(s).</p> <p>Water discharged from site is consistent with the baseline ecological, hydrological and geomorphic conditions of the creeks prior to mining disturbance.</p> <p>Water management is consistent with the regional catchment management strategy.</p>
Native flora and fauna habitat and corridors	<p>Size, locations and species of native tree lots and corridors are established to sustain biodiversity habitats.</p> <p>Species are selected that re-establishes and complements regional and local biodiversity.</p>

### **Progressive Rehabilitation**

The proponent shall carry out all surface disturbing activities in a manner that, as far as is reasonably practicable, minimises potential for dust emissions and shall carry out rehabilitation of disturbed areas progressively, as soon as reasonably practicable, to the satisfaction of the Secretary or his delegate.

### **Rehabilitation Plan**

The Proponent must prepare and implement a Rehabilitation Plan. The Plan must:

- be submitted to and approved by the Secretary or his delegate prior to carrying out any surface disturbing activities of the development;
- be prepared in accordance with DRE guidelines and in consultation with the Department, Office of Environment and Heritage, Environmental Protection Authority, NSW Office of Water, Lithgow City Council and the mine Community Consultative Committee;
- incorporate and be consistent with the rehabilitation objectives in the EIS, the Statement of Commitments and Table 1;
- integrate and build on, to the maximum extent practicable, the other management plans required under this approval; and,
- address all aspects of mine closure and rehabilitation, including post mining land use domains, rehabilitation objectives, completion criteria and rehabilitation monitoring and management.

*Note: An approved Mining Operations Plan (which will become the REMP once the Mining Act Amendments have commenced), required as a condition of the Mining Lease(s) issued in relation to this project, will satisfy the requirements of this condition for a Rehabilitation Plan.*

DRE supports the Angus Place Mine Extension Project.

Should you have any enquires regarding this matter please contact Vince Fallico, Project Officer, Industry Coordination on 8281 7340.

Yours sincerely



**Adrian Delany**  
**Director Industry Coordination**

6.6.14