



Mr Howard Reed
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Dear Mr Reed

Coalpac Consolidation Project - Environmental Assessment

I refer to your letter of 23 March 2012 inviting comments and recommended conditions of approval from the Division of Resources and Energy (DRE) of the Department of Trade and Investment, Regional Infrastructure and Services (Department of Trade and Investment), on the proposed Coalpac Consolidation Project.

DRE has reviewed the Coalpac Consolidation Project Environmental Assessment (EA) dated March 2012. DRE's review focused on resource utilisation and rehabilitation for which the Department of Trade and Investment has legislative responsibilities. DRE's review was expanded to also include the following issues that have potential consequences with respect to rehabilitation:

- Subsidence due to highwall mining (Section 8.1)
- Historical subsurface heating (Section 8.4)
- Geochemical – potential for acid mine drainage (Section 8.11)

General

The proposal aims to consolidate the infrastructure, resources and expand operations at the company's Invincible and Cullen Valley Collieries.

The proponent's proposal to utilise alternative transport methods (such as overland conveyors and rail) rather than relying solely on road transportation deserves merit. The alteration of the original mine plan to avoid open cut mining in areas that have a higher conservation value is also noted.

With the amount of native vegetation clearing required as part of the project (835 hectares of native forest and woodland), the successful and progressive rehabilitation of the land disturbed during the project is crucial to ensure that the project is environmentally sustainable and environmental impacts (such as dust and water quality) are minimised.

Resource Utilisation

The Coalpac Consolidation proposal appears to fully utilise the coal resources within the Illawarra Coal Measures and not sterilise any potential underlying coal resources. The use of the highwall mining method should allow for maximum coal recovery within areas previously mined. The proposed open cut mining should also maximise resource recovery and allow for follow up sand quarrying of the Marrangaroo Formation.

Subsidence

The EA outlines that highwall mining is proposed within areas containing sensitive landscape features such as sandstone pagodas. The proposed remnant highwall from open cut operations will be maintained at a distance of 50 metres from escarpment and pagoda rock formations, with highwall mining continuing beneath these areas to a distance of over 300 metres. Geotechnical assessments (including a peer review) of the highwall mining method, dimensions and pillar widths (incorporating a factor of safety of 1.3) has indicated that subsidence will be less than 20 mm (typically 10-15mm).

Based on this information and the observations of the use of highwall (auger) mining used previously at both Cullen Valley and Invincible Collieries, DRE wish to raise the following points:

- DRE understands that that auger highwall mining previously used by Coalpac was unsuccessful and abandoned as the alignment of the auger (azimuth and horizontal control) was impacted by the geology.
- As the alignment of the highwall mining shafts (and more importantly the resulting pillars) are crucial to ensure subsidence is minimised and the sensitive surface features are not impacted, DRE will recommend that a program of subsidence monitoring be developed by the proponent for approval by the Department's Principal Subsidence Engineer.

Historical subsurface heating

The subsurface heating (combustion) at the Cullen Valley Colliery has been a concern to DRE for some time.

Coalpac proposes to leave a 50 metre barrier surrounding the flooded Tyldesley Colliery workings in order to retain groundwater levels in the workings and effectively provide a barrier of flooded mine workings to stop the spread of the underground combustion. DRE believes that uncertainty remains concerning the impact on water levels from the open cut mining.

Although modelling has provided some indication of the water balance in this area, various uncertainties (such as faulting, and unrecorded mine workings) may have an impact that cannot be predicted. Taking into consideration the planned expansion, relying on the flooded workings as a barrier to the spread of the underground combustion in the long term is not seen as a viable option by DRE. These

considerations provide further justification as to why the management of heating (combustion) should involve the eventual extinguishment.

DRE will require Coalpac to expedite the Department's earlier request for the development of a suitable management plan or strategy that comprehensively addresses the main section of subsurface heating with the ultimate aim of extinguishment and carrying out the rehabilitation of impacted areas.

DRE is seeking Coalpac's commitment to permanently extinguish the heating area and rehabilitate the area in a timely manner.

Geochemical – potential for acid forming material

Acid forming material has historically caused localised issues with acid mine drainage at Invincible Colliery. The EA has identified that coarse rejects from the Lithgow Seam are '*potential acid forming*' (PAF - high capacity) and therefore are required to be segregated for special treatment at disposal (i.e. deep in-pit burial and 5 metres of cover). DRE believes that the proposed management of the PAF would be difficult as several coal seams are processed through the proposed processing plants, and segregation of the Lithgow Seam rejects may be difficult to achieve from a practical standpoint. In addition to this, the potential for PAF in the Marrangaroo Sandstone and inter-burden requires further scrutiny.

DRE will recommend that a comprehensive monitoring and management plan be set up to ensure PAF material is managed correctly, not leading to acid and metalliferous drainage and impacts to rehabilitation. All acid mine drainage issues at Invincible Colliery must also be rectified as part of the expansion project.

Rehabilitation and Final Landform

The rehabilitation strategy presented in the EA, primarily in Section 8.24 is supported by DRE. DRE's main concern is the extent of native vegetation clearing required as part of the project (835 hectares of native forest and woodland). DRE notes that this clearing will occur over a 20 year period and progressive rehabilitation will minimise the active footprint of the mine.

The EA states that "final slopes will be predominately formed at 18 degrees or less". This is an ambiguous statement, which is proposed to be clarified by providing performance criteria limiting rehabilitation to final rehabilitated slope to 18 degrees or less.

The development of a rehabilitation plan that clearly demonstrates how the progressive rehabilitation will be conducted, managed and monitored is critical in minimising environmental impacts. Mine site rehabilitation is administered by DRE under the *Mining Act 1992* via a Rehabilitation Management Plan prepared in accordance with the Departments rehabilitation guidelines, which are currently the *Guidelines to the Mining, Rehabilitation and Environmental Management Process*. The Rehabilitation Management Plan must also address the subsurface heating and geochemical issues identified above.

Although the rehabilitation section of the EA does not nominate the likely area of disturbance before rehabilitation is conducted (active footprint), calculation of proposed exposed active footprints (active mining and dump area) was undertaken for the “worst case scenarios” during Year 2, Year 8, Year 14 and Year 20 in the Air Quality Impact Assessment (Appendix G). Based on these calculations, the largest exposed area for active mining and dumps of 176 hectares would occur in Year 14. This maximum level of active mining disturbance (involving the active mining areas and overburden dump areas) is proposed by DRE to be used in developing a performance criterion for progressive rehabilitation.

Recommendations

Based on the review of the EA, the following recommendations are made by DRE:

1. That the proponent develop a program of subsidence monitoring for approval by the Department of Trade and Investment's Principal Subsidence Engineer prior to highwall mining operations being conducted.
2. That performance criteria are stipulated in the development consent conditions in accordance with the following table:

	Item	Performance Criteria
1	<i>Final Landform</i>	All rehabilitated slope angles less than 18 degrees, free draining with no final void
2	<i>Extinguishment of subsurface heating</i>	Extinguishment of all subsurface combustion in overburden emplacements and underground mine working before mining is conducted within 1 km of these areas.
3	<i>Management of Acid Generating Material</i>	All washery rejects to be treated as potential acid generating material and managed separately from general overburden emplacement in accordance with the Rehabilitation Management Plan. The acid generating material located at the existing Invincible Colliery Tailings Drying Area to be remediated within 3 years of the consent date and in accordance with the Rehabilitation Management Plan.
4	Progressive Rehabilitation	Active mining areas and un-rehabilitated dumps to be maintained at a total area not exceeding 180 hectares.

3. DRE's standard Rehabilitation Management Plan condition be included in any development consent condition that may be granted to ensure that rehabilitation

and the above specific issues raised are administered by the Department of Trade & Investment, Division of Resources & Energy. The Rehabilitation Management Plan format and content is to be in accordance with the Department's most recent Mining Operations Plan guideline.

Summary

DRE supports the proposed expansion and consolidation of the Cullen Valley and Invincible Collieries. The proposal will utilise the valuable energy resource within the area and provide certainty of employment for the collieries 90 fulltime employees. The need to provide continuity of coal supply to the Mount Piper Power Station (and potentially Wallerawang Power Station) confirms the need for this project.

Yours sincerely


WILLIAM HUGHES
ACTING DIRECTOR
MINERALS OPERATIONS