NSW EPA

ENVIRONMENT PROTECTION AUTHORITY

Your Reference: 10_0178
Our reference: LIC07/1337-07: DOC12/12747
Contact: Andrew Helms, (02) 6332 7604

Mr David Kitto
Director - Mining and Infrastructure Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

4 June 2012

Attention: Mr Carl Dumpleton

Dear Mr Kitto

RE: Coalpac Consolidation Project (10_0178) – Exhibition of Environmental Assessment

I refer to the above project and the Department of Planning and Infrastructure's (DP&I) request for the Office of Environment and Heritage (OEH), incorporating the Environment Protection Authority (EPA), to provide any comments and recommended conditions of project approval. The EPA regrets not replying by 1 June 2012 as requested by the DP&I.

Please note that since the EPA became a separate statutory authority on 29 February 2012, all matters pertaining to native vegetation, biodiversity and Aboriginal cultural heritage will be assessed independently by OEH. DP&I should contact Mr Peter Christie (6883 5347) at the Dubbo Office of OEH to discuss these matters as they relate to this project.

The EPA has reviewed the environmental assessment (EA) for this project and is of the opinion that it cannot support the project as is currently proposed for the following reason:

1. The EPA considers that the potential for unacceptable noise impacts upon both rural residents and the residents of Cullen Bullen is too great based on the assumptions in the noise modelling of the proposed 24 hours a day / 7 days a week operations. The EPA has considerable reservations about the ability of the proponent to successfully implement and maintain all the noise mitigation measures outlined in the EA. This matter is of particular significance given that the noise modelling reported in the EA assumes that these measures will achieve the modelled noise levels only once they have been fully implemented for each of the scenarios presented.

The EPA would, however be prepared to review its determination should the proponent undertake the range of requirements and commitments as listed in Attachment A.

Additional comments and recommendations on the noise assessment, air quality impact assessment, greenhouse gas assessment, surface water impact assessment and waste management are also provided in Attachment A.

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If you have any questions regarding this matter please contact Andrew Helms at the Bathurst Office of the EPA by telephoning 6332 7604. EPA Officers from Bathurst and the Noise Assessment Unit are willing to meet with DP&I to discuss these matters in detail at your earliest convenience.

Yours sincerely

RICHARD WHYTE
Manager Bathurst
Environment Protection Authority

Attachment A: EPA comments on Coalpac Consolidation Project – Environmental Assessment

Attachment A: Specific Comments

Noise:

The EPA has reviewed Section 8.6 of the EA and the Acoustics Impact Assessment (AIA) – Appendix H of the EA – and provides the following comments:

- The operational noise source modelling predictions for receiver locations are based on the incorporation of extensive noise mitigation works, including significant reductions in mobile plant sound power levels, significant engineering controls for coal preparation plants, bins and crushers to lower the sound power levels and also the provision of numerous bunds. Section 4.6 of the AIA states that "All noise control and mitigation measures listed in Section 4.3 (*should be Section 4.4*) have been considered in the calculations".

- Section 4.4 of the AIA states "*Figure A19 indicates received noise levels in the absence of the proposed mitigation measures would be clearly unacceptable from a socio-economic and environmental perspectives*". In other words, all noise mitigation presented in this section must be put into effect to achieve the predicted noise levels as presented in Section 4.6 of the AIA. Even with all the extensive noise mitigation in place the noise modelling predicts adverse impacts at 9 locations during the day and 36 residential receivers at night.

- The EPA has significant concerns that the noise attenuation nominated as necessary for plant and equipment, and relied on for the predicted levels, is actually achievable in the first instance, and can be maintained into the future.

- The EPA has concerns with the proponent's commitment and ability to fully and effectively implement the required noise mitigation measures based on previous experience at the site. In previous proposals for the Invincible site, the proponent committed to implementing noise attenuation works on the Invincible Coal Preparation Plant (ICPP). The intent was to reduce the sound power level from 120 dBA to 110 dBA. Following project approvals these attenuation works were incorporated in to a Pollution Reduction Program on the company's Environment Protection Licence. The proponent supplied a report to the EPA stating that the works had been completed, however, the EPA's review found that negligible noise reduction had been achieved. The EPA notes that the measured sound power level from the ICPP – as reported in the current EA – is now 121 dBA and that attenuation works are required to reduce this to 109 dBA. The proponent also previously committed to replace the high pitch reversing alarms on all mobile equipment with broad-spectrum alarms – the EPA found that this commitment was not fully achieved even as late as August 2010.

- As a consequence of the proponent's past delays and difficulties in understanding and achieving its noise objectives, the EPA is not in a position to support the Project based on noise levels with extensive noise mitigation incorporated into the modelled predictions. The cost implications for the presented mitigation (Section 4.4) would be extensive; no cost estimates and no time table have been put forward for mitigation implementation. The implementation of the proposed noise mitigation would need to be in place before noise levels could be assigned to any particular receiver location.

- The EPA is also concerned with the way that the Statement of Commitments (SOC) are presented. In Section 9 of the SOC, under Noise and Blasting, Ref.14 states "*Coalpac will utilise the noise control and management measures listed in Section 8.6.4 to achieve the predicted noise levels at private receivers as listed in Table 27 and Table 28*". Note that Table 27 and Table 28 have been prepared from Table 21 in the AIA. However, the statements under Section 8.6.4 are of concern. Section 8.6.4 is titled "Mitigation and Management" and states under "Feasible and Reasonable Noise Control", "*Numerous noise modelling investigations have been undertaken during the initial planning and mine plan development stages of the Project. These investigations looked at the application of*

various levels of noise management and control to the Project in order to minimise adverse noise impacts on neighbouring receivers. A number of additional noise management measures relating to various "management zones" are presented on Figure 26 have been adopted for the project. Mitigation and management measures will be implemented by Coalpac to ensure noise levels remain consistent with the results presented in Section 8.6.3 which are summarised below for each of the construction and operation phases".

- The EPA notes the above, however there is no list of mobile equipment, fixed plant, etc with assigned sound power levels. The noise predictions have been solely based on allocated sound power levels, there is no commitment to achieve those sound power levels in the AIA. The AIA modelling is based on those sound power levels.

EPA Requirements before supporting project:

1. That the proponent demonstrates, on the existing plant and equipment, that the modelled sound power levels have been achieved.

   or alternatively:

2. that the proponent obtains manufacturer's guarantee, for all plant and equipment, that states that the sound power levels quoted in the noise assessment modelling are attainable (i.e. that the various sound power reductions can be achieved), together with a commitment to implement them to a specific timetable to our satisfaction;

   and;

3. that the proponent commits to providing certification from an acoustic consultant that the sound power levels from all plant and equipment on the project site are at or below those levels used in the noise assessment modelling.

Air Quality:

The EPA has reviewed the *Air Quality Impact Assessment – Coalpac Consolidation Project* (prepared by paeHolmes, 14 December 2011) (the assessment) presented as Appendix G in the EA and provides the following comments:

1. Emissions Inventory

Particle emissions from project operations were estimated using generic factors from published USEPA AP 42 literature. Emission factors used in the assessment were generally sourced and applied in an appropriate manner. Emissions calculated for the proposed future operations at Invincible Colliery are similar in magnitude (total kg emitted per year) to emissions reported in the Dust Stop Pollution Reduction Program (PRP) report titled "*Coalpac Particulate Matter Control Best Practice Pollution Reduction Program – Invincible Colliery*" (paeHolmes, 2012) and provided to the EPA February 2012.

There are two main deficiencies in the emissions inventory presented in the assessment.

1. No site specific parameterisation was provided to quality emission variables; and
2. Wind blown dust emission estimation techniques used are not the most up to date methods.

1.1. Site Specific Emission Parameterisation

Some emission estimation techniques used in the assessment require material parameterisation such as moisture content, and silt content. To enhance the reliability of the emission estimation techniques,

site specific data should be used as input variables for the emission factor equations. The assessment does not include any data to support the values adopted.

The EPA recently reviewed the Dust Stop PRP report (paeHolmes, 2012) submitted by Invincible Colliery. The Dust Stop PRP review is equally relevant to the Coalpac Consolidation Project air quality assessment, namely:

- There is no evidence that site-specific silt and moisture content of materials and rainfall data, for example, have been used to estimate either baseline uncontrolled or controlled particle emissions.

- While some particulate emission control efficiency information from the literature is presented, it critically lacks site-specific data, so the reported particulate emission control efficiencies have not been clearly justified.

1.2. Wind Blown Dust Emission Estimation Techniques

The assessment calculated wind blown dust emissions based on the State Pollution Control Commission (SPCC) emission factor of 0.4 kg/ha/hour published in 1983. The EPA advises that this is not the most up to date emission factor available.

The Dust Stop PRP – *Particulate Matter Control Best Practice – Site Specific Determination Guideline (OEH August 2011)* – requires that USEPA AP 42 emission estimation techniques be used to calculate TSP, PM_{10} and $PM_{2.5}$ emissions from mining activity. To estimate emissions on a shorter time scale (e.g., worst-case day), the correct procedure is presented in US EPA (2006), *AP 42, Chapter 13.2.5, Industrial wind erosion.*

The assessment chose not to use the US EPA methodology on account of no site specific threshold friction velocity information being available. The EPA notes that mining operations are already occurring on the proposed project site. Additionally, Invincible Colliery has submitted a report to the EPA under the requirements of Dust Stop. On this basis, site specific information such as threshold friction velocity should have been available and used in the assessment.

The EAP has calculated wind erosion for the Invincible Colliery component of the project (year 2) via the method presented in USEPA (1998), *AP 42, chapter 11.9, Western surface coal mining*, and using assumptions included in the assessment. Emissions reported in the assessment (year 2) for Invincible Colliery are 60% (55,440 kg/y compared with 92,444 kg/y) of those that result from the USEPA calculation method on an annual basis. Wind blown dust emissions from the project as a whole may be significantly under estimated.

2. Emission Control Measures

Emission control efficiencies are included in tables C.1, C.2, C.3 and C.4 of the assessment. Hauling on unpaved roads and wind erosion are the only two source types that have an emission control efficiency applied to the calculated emission factor.

All hauling emissions are assumed to be controlled by 75% through "level 2 watering" (assessment Table 11.1). Predicted project hauling emissions are summarised and compared to total project particulate emissions in Table 1 below.

Table1: Summary of Hauling Emissions (TSP)

Emission Quantity	Controlled Hauling Emissions	Uncontrolled Hauling Emissions	Difference Uncontrolled to Controlled Emission
Total hauling emissions (kg/year)	920,157	3,680,628	2,760,471
Total project emissions (kg/year)	2,867,280	5,627,751	2,760,471
Hauling as percent of total project emissions	32%	65%	96%[1]

1 – Emission difference as a percentage of modelling emissions

Based on the assumed haul road control, Table 1 above shows a 2,760,471 kg/year reduction in particle emissions. The calculated emission reduction from haul road control is equivalent to 96% of total modelled particulate emissions from the consolidation project (year 2). On this basis, it is critical that hauling emission controls assumed in the assessment are achieved in practice.

Wind blown emissions from exposed surfaces have an assumed control efficiency of 50%, while wind blown emissions from stock piles are not assigned a control efficiency. Predicted project wind blown emissions are summarised and compared to total project particulate emissions in Table 2 below.

Table 2: Summary of Wind Blown Emissions (TSP)

Emission Quantity	Controlled Wind Blown Emissions	Uncontrolled Wind Blown Emissions	Difference Uncontrolled to Controlled Emission
Total wind blown emissions (kg/year)	184,811	358,522	173,711
Total project emissions (kg/year)	2,867,280	3,040,991	173,711
Wind blown as percent of total project emissions	6%	12%	6%[1]

1 – Emission difference as a percentage of modelling emissions

Based on the assessment's assumed wind erosion control, Table 2 above shows a 173,711 kg/year reduction in particle emissions. The calculated emission reduction from wind erosion control is equivalent to 6% of the total modelled particulate emissions from the project (year 2). As mentioned above, it is likely that total wind blown dust emissions from the project were significantly under estimated. On this basis, it is critical that project wind blown dust emission controls assumed in the assessment are achieved in practice.

3. Assessment Results

The assessment predicts numerous exceedances of the EPA's air quality impact assessment criteria for TSP and PM_{10}. A revision of the emission inventory to address deficiencies identified in section 1 (above) is unlikely to change the primary findings of the assessment – that exceedances of the EPA's impact assessment criteria will occur at numerous identified sensitive receptors.

Assessment results, as presented in Table 8.12 of the assessment show predicted exceedances of the PM_{10}, TSP and deposited dust impact assessment criteria at identified sensitive receptor locations on both an annual average and 24-hour average basis.

The assessment does not include a scenario where additional control measures have been included to ensure no exceedances occur.

Recommendations:

The EPA notes that the proponent commits to utilising technologies and initiatives to achieve the air quality outcomes described in the EA (Statement of Commitments – Ref. 9). The EPA supports this commitment. A key aspect of this commitment is the development of an Air Quality Monitoring Program (AQMP). The EPA would require the AQMP to include, as a minimum requirement, the need for performance based outcomes aimed at minimising particulate emissions from the following sources:

- *Wheel generated dust;*
- *Wind erosion of overburden;*
- *Wind erosion of exposed areas;*
- *Loading overburden;*
- *Dumping overburden; and*
- *Bulldozing overburden.*

The AQMP should include the following parts:

- *Key performance indicators;*
- *Monitoring methods;*
- *Location, frequency and duration of monitoring;*
- *Record keeping;*
- *Response mechanisms; and*
- *Compliance reporting.*

In addition, the EPA recommends that the following matters are incorporated in to the conditions of project approval:

1. Any conveyor must:
   - be fully enclosed;
   - incorporate water sprays at all loading points; and
   - have dust curtains installed and used at all transfer points.

and;

2. All Haul trucks used for project of must be capable of hauling a minimum of 90 tonne per trip

Greenhouse Gas:

The following comments are made following a review of Section 8.5 and Appendix G of the EA:

- The EPA is unable to assess the accuracy of the Scope 1 emissions estimates from fugitive gas. The EA estimates that annual fugitive emissions will be approximately 3.1 kt CO_2-e. Fugitive emissions from the mine are estimated using site specific measurements (National Greenhouse and Energy Reporting [NGER] Method 2) however the proponent has not provided sufficient information regarding sampling results and the methodology used to estimate all gas emissions from the coal body. As a consequence, the EPA is unable to assess if the measurements would meet the requirements for NGER Method 2 or Method 3. The proponent should provide either further information and documentation to support the use of mine specific emissions factors or an estimate of

fugitive emissions using the default emissions factors from NGER Method 1. If default emissions factors are used then annual fugitive emissions from coal extraction would be approximately 205 kt CO2-e per annum;

- The EPA is unable to verify the accuracy of the estimated emissions from onsite diesel fuel consumption but notes that the implied fuel use factor of 5 L/t ROM is similar to other open-cut operations;
- The proponent has estimated Scope 2 emissions from electricity use using an appropriate methodology;
- The proponent has estimated Scope 3 emissions from electricity and fuel supply and the transport of product coal to the customer adequately, although the EPA notes that estimates of emissions from product transport by rail appear to not include emissions from the return trip; and
- The proponent has estimated Scope 3 emissions from the combustion of the product coal adequately. This estimate uses specific coal energy content from the mine and assumes that the coal is used for electricity generation. Annual emissions from the use of product coal are approximately 7 Mt CO_2-e per annum.

Surface Water Management:

The EPA notes that the project will generally be a nil discharge site under typical operating conditions and that the existing licensed surface water discharge points for both Cullen Valley and Invincible Colliery will be retained.

The EPA also notes that a sizeable number of small sediment dams will be constructed throughout the life of the project and it is the proponent plans to design and manage these dams such that there will be minimal water discharged via these dams. It would be the EPA's intention, should the project be approved, to require these miscellaneous smaller dams to be consolidated into a single point on the Environment Protection Licence with associated monitoring requirements and discharge limits.

The EPA would discuss these requirements with the proponent as part of the preparation of the revised Surface Water Management Plan.

Waste Management:

The EPA notes that the proponent will develop and implement an Environmental Management System which shall incorporate a revised Waste Management Plan. The EPA is satisfied that the waste management controls described in the project are consistent with the current operations of the Cullen Valley Mine and the Invincible Colliery and are adequately regulated under their respective Environment Protection Licences.