Dear Dr. Shepherd,

Thank you for your letters dated 2 and 11 October 2012 and request for the Environment Protection Authority (EPA) to provide the Planning Assessment Commission ("Commission") with further information on a range of matters relating to the Coalpac Consolidation Project.

The EPA has prepared responses to each of the questions raised in your letters. These responses are provided at Attachment 'A'. If you have any immediate queries about the advice provided the EPA’s Manager Bathurst, Mr Richard Whyte can be contacted on 02 6332 7600 for further advice.

I also note the Commission's interest in meeting with representatives of the EPA to discuss the issues raised in your letter. We are willing to meet with the Commission and in addition, I would like to meet with you personally to discuss these issues further at a mutually convenient time.

Please contact Jude Futcher on 9995 5544 to arrange a time that suits the Commission and the EPA if you wish to take up this opportunity.

Yours sincerely,

BARRY BUFFIER
Chair and CEO
Environment Protection Authority

cc: Sam Haddad (DP&I)

PO Box A280 Sydney South NSW 1232
59-61 Goulburn St Sydney NSW 2000
Tel: (02) 9995 5000 Fax: (02) 9995 5999
TTY (02) 9211 4723
ABN 43 662 265 758
www.epa.nsw.gov.au
ATTACHMENT ‘A’

EPA RESPONSES TO QUESTIONS RAISED BY THE PAC

Questions from letter dated 2 October 2012

Question (1)(i) does the EPA consider that occupants of rural residences should be subjected to noise impacts more than 10 dBA above background during night-time operations from coal mines;

Question (1)(ii) if so, can the EPA please provide details of the research on which this position is based including the places in which the research was conducted and the range of conditions under which it was conducted?

The EPA considers that occupants of rural residences should not be subjected to noise impacts more than 10dBA above background during night time operations from coal mines, except when background levels are less than 30dBA, in which case they are taken to be 30dBA.

The Commission has noted that some potentially affected residences have measured night-time background noise levels below the 30dBA default background level in the NSW Industrial Noise Policy (EPA, 2000) (INP) and the differential between the background noise and the minimum level at which acquisition rights would normally be granted (40dBA) would therefore be greater than 10dBA.

The INP says on page 24 that, “Where the rating background level is found to be less than 30dBA, then it is set to 30dBA.” No explanation is provided for this in the policy but it reflects the available acoustic research referenced on page 55 and at the end of each Appendix to the policy.

There are three issues that need to be understood in relation to this point:
- firstly, the noise criteria in the INP and how the “background plus 5dB” applies to rural areas;
- secondly, why a minimum background noise level of 30dBA is used; and
- thirdly, the variation in community response to noise and how this relates to the “background plus 5dB” criterion.

i) INP Criteria

The noise goals used in the INP to assess the noise implications for any new proposal consist of two components. These components are:
1. The extent to which the contributed L_Aeq noise levels emitted by the development exceeds the L_A90 background noise level. This is referred to as the intrusiveness criteria and is set at background plus 5dBA; and
2. The noise contributed by the new proposal should not raise the ambient noise level of the area above the target amenity noise criteria for the appropriate land-use - to protect amenity by preventing continually increasing ambient levels.

The threshold at which noise mitigation measures need to be considered is normally set by whichever component of the noise criteria is the most stringent. In rural areas the first component is generally the most stringent and so typically forms the Project Specific Noise Level (noise goal) for new proposed industries in these areas. This criterion was in place when the Environmental Noise Control Manual was published by the State Pollution Control Commission in 1985 and its origin is identifiable in historical documents (British and International Standards and the like) dating from the 1960s and 1970s.
ii) Minimum Background

There are two basic reasons for the current stipulation in the INP of a minimum background noise level of 30dBA. The first is to ensure that amenity is protected and the second is to avoid the situation where applying a very low background noise level would not improve the level of protection but may impose very strict requirements on a new development.

At the time the INP was published, there was no real evidence in the literature to suggest that noise impacts on amenity occurred at levels lower than 35dBA. By adopting a minimum background noise level of 30 dBA, the intrusive noise criterion becomes 35 dBA. At that time the World Health Organisation (WHO)\(^1\) recommended the use of a steady internal noise level of 30-35dBA for continuous sources and a maximum internal level of 45dBA for single sound events to protect against sleep disturbance.

Accounting for a noise reduction of approximately 10dB through an open window these levels equate to steady external noise levels of 40-45dBA for continuous noise and a maximum external level of 55dBA for intermittent noise. The WHO "recommended" external noise levels are 5-10dB above the intrusive criterion level of 35dBA. Therefore the minimum background of 30dBA was considered a very conservative figure.

This is not to say that a noise would be inaudible at a level of 35 dBA. However, just because a person can hear a sound it does not necessarily follow that their amenity will be affected to an unacceptable level. There are many noises we hear every day that do not cause annoyance.

iii) Community Response

Because of the widely varying nature of people's reaction to noise it is difficult to assign a criterion level that would satisfy everyone. Also, many non-acoustic factors play a significant role in how people react to the noise they hear. Kosten & Van Os presented a good summary of the factors that determine whether or not an individual will complain about noise:

- characteristics of the noise (sound pressure level, frequency content, pure tones, continuous or intermittent, impulsive, low frequency content);
- characteristics of the individual (personal likes and dislikes);
- characteristics of the environment (very quiet suburban, suburban, residential urban, near industry etc);
- miscellaneous circumstances (noise avoidance possibilities, cognitive noise, unpleasant associations etc); and
- human activity being interrupted (sleep, communicating, reading, working, listening to radio and TV, recreation).\(^2\)

Even with the variation in response to noise and the range of factors that can influence the response, the available scientific evidence suggested that setting a minimum background noise level of 30 dB(A) would ensure that the vast majority of the community would be protected from unacceptable impacts on their amenity.

iv) INP Review

Since the INP was published, new research has become available especially the Night Noise Guidelines for Europe, World Health Organisation, 2009. Very briefly, this study found that although individual sensitivities and circumstances differ, it appears that no substantial biological effects are observed up to \(L_{\text{night, outside}}\) 30dBA. Between 30 and 40dB \(L_{\text{night, outside}}\) some effects occur but even in the worst cases they are modest.

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The World Health Organisation therefore recommended a health based target of $L_{\text{night, outside}}$ 40dBA and an interim target for Europe of $L_{\text{night, outside}}$ of 55dBA.

The descriptor $L_{\text{night, outside}}$ is generally equivalent to $L_{\text{Aeq,night}}$ (10pm to 7am) as used in the INP but averaged over a longer term, for example, a year.

These findings will be taken into account by the EPA in the current review of the INP. Consideration will also be given to whether a change in the minimum background noise level is warranted taking into account the latest acoustic research.

v) Night time impacts

Your letter of 2 October 2012 noted that submissions had raised concerns about night time impacts. In the EPA’s submissions dated 4 June and 8 September 2012 to the Department of Planning and Infrastructure for the Coalpac Consolidation Project, the EPA recommended that, for at least the first two years, the project conditions of approval should specify project hours of operation whereby only low noise equipment maintenance activities should be permitted between 10pm and 7am on Monday to Saturday and between 6pm and 7am on Sundays, with no operation on public holidays. This was intended to protect night-time amenity for affected residents.

vi) Boggabri decision

Your letter also noted that in the Commission’s determination on the Boggabri Coal project (DPI Project Application reference: 09_0182) the Commission adopted a position to provide for acquisition at a level of 35dBA in line with a recommendation from the then Office of Environment and Heritage. The advice provided by the former EPA in relation to that project was specific to that case and reflected the proponent’s willingness to enter into negotiations for property acquisition if the existing licence limit of 35dBA was likely to be exceeded.

The EPA believes that the threshold for property acquisition is a matter for planning authorities. The INP specifically says in Section 1.4.8 that, “The noise criteria in this document have not been derived for the purpose of land acquisition.” As a general rule, the EPA supports the long standing practice that acquisition would be warranted where predicted noise levels exceed the background noise level by more than 10dBA as this is a level at which a significant volume of complaints may be anticipated. In the interests of greater transparency, I will be writing to the Director General of the Department of Planning and Infrastructure (DP&I) to ask that his Department finalise a policy on the circumstances in which negotiated agreements for property acquisition would be warranted. A copy of this correspondence will be provided to the Commission.

On a related matter, I have also had discussions with the DP&I in relation to the appropriate noise criteria for non-network rail lines exclusively servicing an industrial site. This is a new matter not covered by existing policies. The EPA is currently finalising a Rail Infrastructure Noise Guideline which will specify the agreed approach in Appendix 3. Basically, the guideline recommends that where non-network rail lines extend beyond an industrial site, the noise impacts should be assessed against the amenity based “acceptable noise levels” in the INP. The EPA Board has endorsed this approach and the guideline will be published once it has been approved by the Ministers for the Environment, Transport and Planning. I will keep you informed of developments in this regard.

Question (2) The proponent’s EA (Section 8.6.2) acknowledges that construction noise should be assessed under the INP, not the Interim Construction Noise Guidelines (ICNG). The EA then says that the noise has been assessed under the ICNG but not the INP. Is the EPA satisfied with the assessment and conclusions in relation to construction noise?

The EPA is satisfied with the assessment and conclusions in relation to construction noise. The EPA’s Interim Construction Noise Guideline provides that it does not cover noise from mining, including
construction associated with mining - this is to be assessed under the Industrial Noise Policy (EPA, 2000). This is essentially what has been done in that all noise ("construction" and operation") has been assessed against an intrusive criterion of background + 5dB(A). Mitigation measures for noisier "construction" activities include appropriate scheduling of such activities, in this case the scheduling is to restrict such activities to "standard hours of construction". Where predicted noise levels greater than background + 5dB(A) remain then these residual impacts need to be addressed in accordance with the INP.

Question (3) The EPA submission dated 4 June 2012 has recommended that any Air Quality Management Plan include 'performance based outcomes aimed at minimising particulate emissions for the following sources' and goes on to list a range of potential sources. Is the EPA able to provide more specific advice on the suggested performance based outcomes that would be acceptable?

In order to answer the Commission's question, the EPA's performance based outcomes for the respective dust sources are as follows:

Wheel generated dust – the performance based outcome will be to achieve a wheel-generated dust control efficiency of 80 percent with the measurement of soil moisture, silt content, the frequency of haul road dust watering and the use of dust suppressants as the parameters to be assessed.

Loading, Dumping and Bulldozing Overburden – the performance based outcome will be not undertake these activities during adverse weather conditions, which are to be identified for each mine. Parameters that will be used to define avoiding adverse weather conditions include wind direction and strength, relationship to sensitive receptors, placement of meteorological stations, management response protocols etc.

Wind erosion of overburden and exposed areas – the performance based outcomes are still to be developed as part of the Dust Stop Program.

The Commission should also note that the EPA is continuing with its Coal Mine Dust Stop Program, which will require coal mines to implement practicable best practice controls for particulate matter (dust) which have been identified in the site-specific determination report for each mine. As this Program is implemented (a second round of Pollution Reduction Programs is expected to be rolled out in 2013) for a range of potential sources for dust, performance based outcomes will be developed and applied for each mine.

Question (4) Several submissions claim that the surface and mine water quality monitoring required by the EPA is inadequate as it does not cover the full range of likely pollutants. Contamination with metals was a particular focus. Preliminary Assessment by the Commission suggests that the concerns raised may be well founded and that the Environment Protection Licence (EPL) requirements are not consistent with best practice. The EPA's response to these concerns would be appreciated.

To address the Commission's concerns, the EPA's response is set out below for Invincible Colliery (surface and underground water) and Cullen Valley Mine (surface water), with a summary to complete this response. The summary indicates to date the EPA has been satisfied with the monitoring requirements, and that the licence(s) can be varied if additional monitoring is required in the future.

Invincible Colliery – Surface Water

Invincible Colliery has one Licensed Discharge Point (LDP2) on its Environment Protection Licence (EPL No. 1095) which is a wet weather discharge from the Main Colliery Dam. The monitoring parameters are Oil and Grease, pH and Total Suspended Solids, which are typical for wet weather discharges authorised by an EPL, in line with best practice for handling stormwater discharges.
In its Annual Returns submitted since 2007-08, Coalpac Pty Ltd has reported that Invincible Colliery has only discharged twice from LDP2. Invincible collects surface runoff and uses it from its Main Colliery Dam for dust suppression around the mine and washing coal. At Invincible the poorest quality surface water (low pH), draining from the ccal reject area, is collected in the Environment Dam and this water is pumped to the Main Dam, as required. Invincible Colliery does not have an authorised discharge point to discharge Environment Dam water directly off-site. However, the water from the occasional pumping from the Environment Dam to the Main Colliery Dam, would involve considerable dilution with the Main Dam Water. In terms of a comparison, the storage volumes of the Main Colliery Dam and the Environment Dam are 115 and 0.03 Megalitres (ML), respectively.

Given the infrequent discharges from the Main Dam Colliery (LDP2), and the relative storage volumes of the two dams, to date the EPA has not sought to require Coalpac Pty Ltd to monitor the discharge from LDP2 for metals, or a wider range of pollutants beyond what is typically required for a wet weather surface water discharge from a mine site.

**Invincible Colliery – Underground Mine Water**

Coalpac's EPL 1095 does have a discharge point (LDP1) for the discharge of mine water from its underground workings. These are historical workings and no longer mined.

In terms of monitoring Coalpac is required to monitor any discharge from LDP1 for 22 pollutants, of which 13 are metals or elements. These are: arsenic, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium and zinc.

These monitoring requirements are adequate; however, LDP1 is no longer used by Invincible Colliery. The circumstances relating to LDP1 are described below in the answer to Question 5.

**Cullen Valley Mine – Surface Water**

The Lithgow Coal Company has two LDPs on its Environment Protection Licence (EPL No. 10341) for the Cullen Valley Mine. Both are for the discharge of surface water after rain. The monitoring parameters are Oil and Grease, pH and Total Suspended Solids, which are similar to those for Invincible Colliery, being typical for wet weather discharges authorised by an EPL. For Cullen Valley Mine, additional monitoring is required for Electrical Conductivity, iron and manganese (put on the licence at the commencement of the mine in 2000).

In its Annual Returns submitted since 2006-07, the Lithgow Coal Company has reported that Cullen Valley Mine has only discharged once, in 2009-10. Like Invincible Colliery, the Cullen Valley Mine collects surface runoff and uses it for dus: suppression around the mine.

**Summary – Surface Water Discharges**

In summary, for the infrequent discharge of surface water after rain from either mine, the monitoring of pH, Oil and Grease and total suspended solids is adequate. Both mines manage their surface water to maximise its use on-site so that they will only infrequently discharge from their respective mine sites. These infrequent discharges are typically after prolonged or heavy rain, and not when it is dry. The EPA understands that this arrangement will be maintained should the Coalpac Consolidation Project be approved. From the EA Coalpac proposes a series of sediment dams to be used in relation to the mining stage at the time, and that any discharge of surface water from an approved Project would be from storage dams that will be sized to contain stormwater runoff from the 10 Year Average Return Interval (ARI) 72 hour storm event (171 millimetres).

Presumably, should approval be granted, Coalpac will apply for a variation to combine the two existing licences. At that time the EPA could take into account the need to put limits on the licence and to monitor for metals.
Question (5) Some submissions claimed that Invincible Colliery’s LDP001 licensed discharge to Long Swamp has caused pollution. Despite Coalpac’s claim that the discharge meets EPA criteria, the Commission was provided with photos taken by special interest groups showing red staining on the walls of the collection pond at the discharge point (see attached). As Coalpac has not used this discharge point since 2008 and claims it should not be needed in future, can the EPA justify retaining this discharge point in the EPL?

The retention of this LDP is now not justified and after considering the issues that have re-surfaced within the Commission via public interest groups about the 2007-08 discharge, on 4 October 2012 the EPA sent to Coalpac for comment a Draft Notice removing LDP1 from its EPL. The EPA will take into consideration any comments from Coalpac prior to making a decision about issuing the notice. Coalpac has until 31 October 2012 to respond to the EPA’s Draft Notice.

For the Commission’s information it was always the EPA’s intention to remove LDP1 from the EPL following the conclusion of the planning process for the Coalpac Consolidation Project (in association with other changes that may be required, regardless of whether or not approval was granted by the Minister for Planning and Infrastructure).

Nevertheless, it is important that the Commission understands the circumstances of the discharge event in 2007-08 which was displayed at the Commission on 18 September 2012. Historically, the old underground workings by Invincible Colliery required the use of a bore for dewatering and an authorised discharge point (LDP1). LDP1 had remained on Coalpac’s EPL because the company had indicated to the EPA that conceptually it may again expand its underground workings to the east and at some point in the future it would need to discharge into Long Swamp (following an upgrade to treat the water to a discharge quality acceptable to the EPA).

However, in 2007-08 Coalpac activated the discharge at the request of Delta Electricity so that the water could ultimately flow into the Coxs River and Lake Wallace for use by Wallerawang Power Station which was running short of water because of several years of drought.

On 22 May 2008 Coalpac ceased the discharge following an on-site meeting with the EPA on 21 May 2008 when the EPA told Coalpac the discharge from the old bore was unacceptable in terms of quality (higher salinity and iron than in the 1990’s) and the iron staining of the vegetation in Long Swamp. On 26 June 2008 the EPA wrote to Coalpac advising before discharging again from LDP1 it needed to demonstrate that the discharge was not adversely impacting on Long Swamp or to consider other options if Delta was desperate for water (e.g. piping the water to the power station). The EPA understands that Coalpac has recently removed the pump from the bore located at LDP1.

Q (6) At the Commission’s public hearing at Lithgow, a special interest group presented a list of non-compliances by Coalpac with licence requirements (see attached). Can the EPA provide advice on the performance of Coalpac in meeting its environmental obligations, including a summary of licence or other breaches of the environmental legislation?

The EPA is satisfied with the performance of Coalpac and the Lithgow Coal Company in relation to their EPLs. Below is a summary of licence non-compliances and the EPA’s response for Invincible Colliery and the Cullen Valley Mine.

Invincible Colliery – EPA Regulation

Coalpac has reported in its Annual Returns since 2005-06 for Invincible Colliery that it has only had three non-compliances (refer to Table 1). One non-compliance was for a water pollution limit (L3) exceedance, and the second was for a failure to monitor and a blasting limit exceedance. All three exceedences were considered to be minor and the EPA did not take any regulatory action against the company.
Table 1. The non-compliances reported by Coalpac for Invincible Colliery since 2005-06.

<table>
<thead>
<tr>
<th>Annual Return</th>
<th>Reported Non-compliance (Licence Condition)</th>
<th>Coalpac’s Reason for the Non-compliance</th>
<th>EPA Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 February 2011 to 27 February 2012</td>
<td>L6.1 – on 28 June 2011 a blast overpressure of 120.3 dB (Lin Peak) was recorded – 0.3 dB above the licence limit of 120 dB (Lin Peak).</td>
<td>The likely cause was due to energy escaping via a face-burst above an old underground tunnel. The ground vibration velocity was 0.56 mm/s, inside the 10 mm/s EPL limit. No public complaints were received due to the blast event.</td>
<td>No action warranted. Coalpac’s reason was accepted. The exceedance was minor and did not result in any complaints to Environment line.</td>
</tr>
<tr>
<td>28 February 2008 to 27 February 2009</td>
<td>L3.1 – one discharge of 42 mg/L TTS above the licence limit 30 mg/L TSS.</td>
<td>Caused by a predominance of iron oxide</td>
<td>The discharge ceased on 22 May 2008 following the EPA’s advice on 21 May 2008 that the discharge from LDP1 was unacceptable.</td>
</tr>
<tr>
<td>28 February 2005 to 27 February 2006</td>
<td>M2 – requirement to monitor concentration of pollutants discharged.</td>
<td>There was no monitoring done because there were no discharges from LDP1 and 2.</td>
<td>No action warranted. Coalpac’s reason was accepted. Technical breach.</td>
</tr>
</tbody>
</table>

Invincible Colliery was in care and maintenance for the early 2000’s up until 2006. Since 2007 the EPA has received 28 complaints from the public (4 for noise, 7 for dust, 5 for blasting, 11 for tracking coal fines/mud off-site on the Castlereagh Highway and 1 for vegetation clearing).

A summary for the EPA’s regulation of Invincible Colliery is as follows:

- Since 2007 the EPA has conducted 6 inspections of the mine.
- Since 2008 three Pollution Reduction Programs (PRPs) have been placed on the licence. One for reducing noise emissions from haul trucks and the Invincible Coal Preparation Plant (ICPP), the second to implement measures to reduce tracking of coal fines and mud off-site; and, the third requiring the licensee to assess site performance against best practice for reducing coal dust.
- The EPA has not considered it necessary to issue Penalty Infringement Notices (PINS) to Coalpac.
- In 2011 the EPA sent Coalpac a Warning Letter for tracking of material on to the Castlereagh Highway.

Cullen Valley Mine – EPA Regulation

Since 2005-06, Cullen Valley Mine has reported two non-compliances with its licence (refer to Table 2). One was for the malfunctioning of a meteorological station and the other was for a minor water pollution limit exceedance. In each case the EPA did not take any regulatory action.
Table 2. The non-compliances reported by Lithgow Coal Company for the Cullen Valley Mine since 2005-06.

<table>
<thead>
<tr>
<th>Annual Return</th>
<th>Reported Non-compliance (Licence Condition)</th>
<th>Lithgow Coal Company's Reason for the Non-compliance</th>
<th>EPA Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 December 2009 to 9</td>
<td>L3 – one discharge of 84 mg/L TSS and pH 6.2</td>
<td>Approximately 125 mm of rain fell mostly in two events. Capacity was sufficient for the first event however discharge occurred during the second.</td>
<td>No action warranted. The regional rainfall was intense and prolonged. Lithgow Coal's reason was accepted. In November – December 2010 the EPA's Environment Line received 39 Self Reports of discharges in the extreme wet, 14 from mines (none from Lithgow Coal).</td>
</tr>
<tr>
<td>December 2010</td>
<td>exceeded 50 mg/L TSS limit and 6.6 pH minimum limit, respectively.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 December 2010 to 9</td>
<td>P (P1.1 – EPA Identification Point No. 6) – Location of monitoring/discharge points and areas.</td>
<td>Technical and equipment failure. Several attempts were made to rectify the unit. Met. Data was used from an adjacent weather station (2.6 km away) for the reporting period. New Met. Station installed in January 2012.</td>
<td>No action warranted. Coalpac's reason was accepted. Coalpac relied on data collected from an adjacent Met. Unit and did replace the malfunctioning unit.</td>
</tr>
<tr>
<td>December 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since 2001 the EPA has received 29 complaints (14 for noise, 9 for dust, 2 for odour, 1 for blasting and 3 for the tracking of mud off-site) about the Cullen Valley Mine. For your information, prior to 2001 the EPA received 120 complaints about dust being emitted from the mine. The operator at the time, the Lithgow Coal Company (before Coalpac assumed ownership), was convicted in the Land and Environment Court in 2003 as a result of this dust impacting on the village of Cullen Bullen in 2001.

A summary of the EPA's regulations of Cullen Valley Mine is as follows:

- Since 2007 the EPA has conducted six inspections of the mine.
- Since 2010 two PRPs have been placed on the licence. One for improving drainage/haul road profiling to reduce tracking of mud and the second requiring the licensee to assess site performance against best practice for reducing coal dust;
- The EPA has not considered it necessary to issue any PINS to the Lithgow Coal Company (Coalpac subsidiary);
- Previously, in 2003 the Lithgow Coal Company was fined $30,000 following dust emissions from the site impacting on the village of Cullen Bullen in 2001.

Summary

Overall, the EPA is satisfied with the performance of Coalpac and Lithgow Coal Company in operating their respective mines to comply with the conditions of their EPLs. Since 2005-06 any non-compliances reported on the Annual Returns have been minor, and infrequent.

Notwithstanding this, in its advice to the Department of Planning and Infrastructure (DP&I) on 4 June 2012 the EPA has been critical of Coalpac's responses to one PRP (with several components) that was
negotiated for Invincible Colliery on 28 August 2008. The EPA has expressed concerns about Coalpac’s commitment and ability to fully and effectively implement the required noise mitigation measures for the proposed Coalpac Consolidation Project. For example, in 2008 Coalpac committed to implementing noise attenuation works on the Invincible Coal Preparation Plant (ICPP) to reduce the sound power level from 120 dB(A) to 110 dB(A). The PRP negotiated by the EPA was for measures to attenuate noise (eg cladding of the Bradford Breaker and the washery) and these were implemented within the timeframe of the PRP but failed to reduce the noise. On 24 October 2008 Coalpac supplied a report to the EPA stating that the works had been completed; however, the EPA found that negligible noise reduction had been achieved.

Instead of attempting further measures, Coalpac negotiated a buy-out with the affected residents as a solution. This was acceptable to the EPA.

Question (7) The EPA Submission dated 4 June 2012 referred to a commitment by Coalpac to replace the high pitch reversing alarms on all mobile equipment with broad-spectrum alarms and noted that this work has not been completed. The proponent has since advised that this work has now been completed. Is the EPA able to advise if these reversing alarms are now operating satisfactorily?

On 19 October 2012 the EPA was advised by Coalpac that all the mobile plant and equipment used by the company and its contractors (Big Rim and LCR Mining Group) were now fitted with broad spectrum reverse alarms. The EPA no longer receives complaints from the community about the noise from reversing alarms, which indicates that the equipment used and the reversing alarms are now operating satisfactorily.

Question (8) The EA notes some occasions where pH levels have been low in collecting dams, presumably as a result of acid forming material. The project involves exposing further acid forming materials and suggests management of these will be included in the Water Management Plan. In essence the Proponent has committed to capturing all potentially acid forming water and treating it before discharge. Is the EPA able to provide any advice to the Commission on the adequacy of the Environmental Assessment and proposed measures for ensuring there are no adverse impacts, either short or long term, to surface or ground waters?

The EPA considers the EA to be adequate in dealing with the handling of potentially acid forming water. Appendix P (Geochemical Assessment of Overburden and Coal Reject Materials) identifies processes for handling both Potentially Acid Forming (PAF) and Non-Acid Forming (NAF) material.

According to the EA the placement of PAF coarse reject material in the open pit and/or co-disposal with overburden should involve covering as soon as practical (within a few weeks) with 5 metres of NAF overburden material to minimise the length of exposure time to oxidising conditions and minimise the potential for acid and metalliferous drainage (AMD). This procedure is recommended to be implemented by assessment using kinetic leach column tests and cover design investigations. Appendix P states that both overburden materials and coal reject materials associated with the project are likely to be NAF and ‘have a high factor of safety with respect to acid generation’, apparently a characteristic of the Lithgow Seam.

Regarding the protection of surface water, the EPA notes that Section 5.2 of Appendix P recommends the monitoring of any surface water seepage from all overburden and coal reject emplacement areas for a range of pollutants including pH, electrical conductivity, total suspended solids, dissolved metals and sulphate. The concept is to include this monitoring within the Water Management Plan that will form a component of the Mine’s Environmental Management System (EA, Chapter 9 - Statement of Commitments, Environmental Management).

Should the Project be approved, it would be the EPA’s intention to require the monitoring of this surface water seepage for these pollutants (with proper construction of the co-disposal areas the ingress of surface water and rain should be prevented or at least minimised). Similarly groundwater bores could be monitored to determine if the encapsulation of PAF is protecting groundwater.
Finally, in its Statement of Commitments the EPA notes:

No. 31 Coalpac will undertake groundwater and surface monitoring for the Project in consultation with relevant regulators, including the installation of two additional bores and four replacement bores.

No. 33 Coalpac will maintain its existing licensed water discharge points and operate them to the approval of relevant regulators.

No 35. Potentially acid forming coarse rejects will be covered as soon as practical with at least 5 metres of Non Acid Forming overburden material to minimise the length of exposure time to oxidising conditions and minimise the potential for acid mine drainage.

No 36 All inert waste from the washing of crushed sandstone will be pumped into the flooded Tyldesley Colliery underground workings via boreholes drilled intersect the workings or co-disposal in-pit. In the unlikely event that any waste material is determined to be PAF this will be buried deep in-pit with Potentially Acid Forming overburden.

Given the above, it is the expectation of the EPA that surface and groundwater can be protected and monitoring put in place to determine if there are any unpredicted trends contrary to this objective.

Question from the Commission's letter dated 11 October 2012

Given the EPA’s Standard methods for Modelling and Assessment of Air Pollutants refers to the 50 µg/m³ but makes no reference to 150 µg/m³, and the increased concerns raised by NSW Health, the Commission would appreciate any additional views the EPA may have in relation to the appropriateness of the 150 µg/m³ criteria for acquisition.

The EPA has concerns with the DP&I’s 150 µg/m³ acquisition criteria and will progress discussions with DP&I and NSW Health to work through this particular issue with the intention of developing an updated acquisition framework. We would be happy to discuss this further with the Commission.

In order for the Commission to better understand the EPA’s approach to the various aspects of controlling particle emissions from coal mines the following advice is provided.

1. Rationale for best practice for reducing PM₁₀ emissions

The EPA acknowledges that:
- PM₁₀ is associated with adverse health impacts;
- there is currently no evidence of a threshold below which health effects do not occur;
- the health impacts of PM₁₀ decrease with decreasing exposure; and
- there are incremental health benefits in reducing particle concentrations and exposure, even if concentrations are below standards.

The EPA’s policy response is to require best management practice to reduce PM₁₀ emissions. This is consistent with the objectives and requirements of the Protection of the Environment Operations Act 1997 (POEO Act):
- Best management practice is the guiding principle in meeting an objective of the Protection of the Environment Operations Act 1997 (POEO Act), which is to reduce the risks to human health by reducing emissions to harmless levels (Chapter 1, Section 3).
• Best management practice is also the guiding principle for meeting the requirements sections 124 to 128 of the POEO Act. These sections require that air pollution related activities be conducted in a proper and efficient manner, while section 128 requires that all necessary practicable means are used to prevent or minimise air pollution.

2. The EPA is requiring best management practice to reduce PM$_{10}$ emissions at all operating coal mines in NSW.

The EPA has required all 60 operating coal mines in NSW through the "Dust Stop" to assess their current operations against best management practice and determine the most effective way to significantly reduce their on-site dust emissions. The EPA is now negotiating air quality mitigation measures via a second set of PRPs.

The air quality mitigation measures will take into account site specific factors, be transparent and legally enforceable, with the methods for determining compliance clearly identified. The EPA is negotiating license conditions that will include:

• Key performance indicator;
• Monitoring method;
• Location, frequency and duration of monitoring;
• Record keeping;
• Response mechanisms; and
• Compliance reporting.

For example, the EPA is targeting an 80% efficiency outcome for haul roads. Below is an example of how a licence condition may developed for haul roads.

3. Coal Mine Particulate Matter Control Best Practice Implementation – Wheel Generated Dust

1. The Licensee must achieve and maintain a dust control efficiency of 80% or more on all haul roads by <date>.

   The control efficiency is calculated as:

   \[
   CE = \frac{E_{(uncontrolled)} - E_{(controlled)}}{E_{(uncontrolled)}} \times 100
   \]

   Where \( E \) = the emission rate of an activity.

2. The Licensee must assess its conformance with Condition 1 by monitoring the following parameters under varying meteorological conditions, including temperature, rainfall, solar radiation and evaporation rates:

   - haul road moisture and silt content;
   - frequency, duration and rate of water/suppressant application to haul roads;
   - compliance with manufacturer's specifications for chemical or organic dust stabilisers or suppressants; and
   - haul road dust levels.

3. Should the Licensee wish to use an alternative set of parameters to the ones specified in Condition 2, the licensee must submit a written request and supporting report to the EPA providing details of the parameters proposed to be used. The report must contain a detailed justification of the applicability of the proposed parameters.

4. The Licensee must prepare and submit a Monitoring Program that details the following:
- the locations where each parameter will be monitored;
- the methods to be used to monitor each parameter;
- the frequency at which each parameter will be monitored; and
- the Key Performance Indicators that will be used to determine whether the Licensee has complied with Condition 1.

5. The Licensee must submit a written report to the EPA providing the results of the Monitoring Program. The report must include an assessment of the dust control effectiveness achieved and the Licensee's compliance with Condition 1.

Finally, the EPA considers that any new planning approvals for coal mines should be consistent with the approach EPA is taking to regulate operating mines.