



Your reference :
Our reference : EF15/16176; DOC15/373474-01
Contact : Ms Sheridan Ledger; (02) 6332 7608

Mr Stephen O'Donoghue
A/Director Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

6 November 2015

Dear Mr O'Donoghue

PROPOSED BYLONG COAL PROJECT

RESPONSE TO EXHIBITED ENVIRONMENTAL IMPACT STATEMENT

I refer to your email of 21 September 2015 requesting the Environment Protection Authority (EPA) provide comment on the exhibited Environmental Impact Statement (EIS) for the proposed Bylong Coal Project (the Project).

As requested, the EPA has considered the EIS for the Project in relation to the environmental issues for which the EPA has the primary legislative responsibility, being air and noise quality impacts, including blast overpressure and vibration, surface water and waste management.

Please find in Attachment 1 the EPA's assessment of the EIS, which includes general comments on the adequacy of the impact assessment, recommendations regarding the provision of additional information and where practicable, recommended conditions of consent, if approval is recommended by the Department of Planning & Environment (DPE).

It is the EPA's expectation that it will be provided of copy of any 'Response to Submissions Report' prepared for the Project and adequate opportunity for the EPA to provide further recommendations to the DPE in relation to the Project. Further, the EPA requests the opportunity to review the draft Director-General's Environmental Assessment report for the Project and to comment on any conditions of consent, should approval be recommended by the DPE.

Given the proposed scale of the project, if approval is obtained under the provisions of the *Environmental Planning and Assessment Act 1979*, the proponent will be required to make a separate application to the EPA for an Environment Protection Licence (EPL) pursuant to the *Protection of the Environment Operations Act 1997* to operate.

Should you have any further enquiries in relation to this matter please contact Ms Sheridan Ledger at the Central West (Bathurst) Office of the EPA by telephoning (02) 6332 7608.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Darryl Clift'.

DARRYL CLIFT
A/Manager Central West
Environment Protection Authority

ATTACHMENT 1 – EPA REVIEW OF THE EIS FOR THE PROPOSED BYLONG COAL PROJECT

Air Quality

The air quality and greenhouse gas impact assessment (AQIA) summarises the results of dispersion modelling used to assess air quality impacts from the proposal.

The EPA has reviewed the air quality impact assessment and makes the following comments. The assessment is broadly consistent with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* and has been peer reviewed. The report details the methods used to estimate emissions and to simulate dispersion.

Particles

Background air quality – “sufficient baseline data”

The SEARs issued for the Project included “using sufficient baseline data” for the AQIA.

The EIS provides that air quality and meteorology data have been collected for use in the AQIA from August 2011 and is summarised to June 2014. The EPA notes that instrument failures significantly impacted data recovery which is reported as 42% and that the data utilised (Figure 5.6 of the AQIA) has been obtained essentially in two periods, with a 14 month gap in between. The first shows data mid-August to end of May, while the second has data October to June. Generally the EPA's preference would be to utilise a continuous year of data, however it is noted that these data cover a full year.

Based on this data the EIS summary states background (24-hour hour) concentrations of:

	Median	Average	Maximum
PM ₁₀	10.2	12.9	80.2
PM _{2.5}	4.7	6.5	61.9

Even though the data is limited, exceedences of the NEPM goals were recorded during the monitoring period.

Given limited dataset, the EPA utilised data it obtained from nearby sources which is as follows:

Mount Penny Monitoring

PM ₁₀	10.2	11.1	54.
PM _{2.5}	4.2	7.2	48.9

Within the OEH network¹:

Merriwa	13.0	14.8	55.2
Oakdale	10.9	13.1	99.0
Bargo	12.7	14.0	208.9
Bathurst	12.9	15.8	145.0

¹ median and average from full available record, max for the period August 2011-June 2014

While the EPA considers that the available data is limited and does not include the full range of weather conditions, the comparison to the data listed above shows that it is likely to represent usual conditions. It should be noted though that the period 2011 to 2014 does not include either very dry years or very wet years. As such, any interpretation of the cumulative assessment should therefore consider that the background value is usual rather than conservative.

Impact Assessment

Impacts have been assessed for mine operations in years 3, 5, and 9. The EPA notes that as there was only 42% valid data from the monitoring program, cumulative impacts were assessed using both a

contemporaneous approach and a statistical approach (Monte Carlo). The impact assessment results in the EIS are provided as both increments, being the predicted emission levels from the Project, and the cumulative ground concentrations for each year assessed.

The maximum increments from the mine operation are reproduced in the table below for each year simulated as the largest non-mine receptor, for the village of Bylong, and the largest mine owned receptor. There are substantial increments at non-mine receptors and very large increments at mine owned receptors.

These substantial increments did not generate additional exceedences in the contemporaneous analysis. Monte Carlo analysis suggests that these increments may generate additional exceedences of the 24-hour criterion for PM₁₀ at non-mine receptors.

In year 3 six additional exceedence days are simulated for R69. Five extra days are predicted for this receptor in year 5 while in year 9 one additional day is simulated for R141.

No additional exceedences are simulated for the 24-hour PM_{2.5} criterion.

From Table 8.1, Table 8.2 and Table 8.3 the tabulated highest increments are as follows:

	PM ₁₀		PM _{2.5}		TSP	Dust Deposition
	24-hour	annual	24-hour	annual		
Year 3						
Non-mine receptor	27.5	9.3	4.6	1.4	25.4	0.3
Bylong	20.7	5.2	3.0	0.8	14.3	0.2
Mine owned	790	367	121.5	49.7	1281	23.6
Year 5						
Non-mine receptor	28.2	8.2	4.2	1.1	23.1	0.3
Bylong	20.9	5.4	3.6	0.8	15.5	0.2
Mine owned	1346	507	162	56.6	1867	43.3
Year 9						
Non-mine receptor	17.6	5.0	2.8	0.6	13.9	0.19
Bylong	11.7	3.1	2.5	0.4	8.8	0.12
Mine owned	190	34.9	22.1	4.3	116	2.31

Conclusions

The AQIA provides that annual criteria is predicted to be met at all non-mine receptors though the Project may result in additional exceedence days at non-mine receptors.

Nitrogen dioxide

Impact Assessment

The assessment considered nitrogen dioxide arising from blasting and from diesel engines. Conversion of nitric oxide (NO) to nitrogen dioxide (NO₂) was assessed using the ozone limiting method. This is expected to be conservative if the ozone concentrations are realistic.

Blasting was simulated in year 5, when open-cut mining was greatest. No exceedences of the one-hour impact criterion of 246 µg/m³ were simulated. The highest concentration expected is 62 µg/m³ in the western open-cut and 54 µg/m³ in the eastern open cut.

Estimate of NO₂ from diesel engines was based on the projected quantity of fuel used. Year 5 was assessed as the year with greatest open-cut activity. It is also when mining is closest to the village of Bylong.

Diesel engines emissions were estimated from the USEPA Tier 2 NO_x emission criterion for non-road diesel, 30.36 kg/kl.

Modelling results showed no predicted exceedences of the one-hour criterion (246 µg/m³) and no exceedences of the annual criterion (62 µg/m³) at any receptor. The greatest predicted concentrations were 92 µg/m³ for one-hour concentration at receptor 69, and 23 µg/m³ for annual concentration, also at receptor 69.

Conclusion

Assessment shows that predicted concentrations of NO₂ are less than the criteria for this pollutant.

Diesel particle emissions

Emissions of particulate matter from diesel engines have not been adequately quantified or assessed. This is a potentially significant source requiring management options differing from those used to suppress dust on roads.

The EPA recommends that DPE require these diesel emissions be estimated separately. This requirement is expected to change total emissions and therefore analysis will be needed to identify consequential changes to the assessed impact on the air environment. The EPA also recommends consideration of the approaches to minimising emissions from diesel plant and equipment is also requested.

In considering additional control measures for diesel particulate matter, the proponent should consider their obligations under s128 of the *Protection of the Environment (Operations) Act*.

Spontaneous Combustion

Section 11 of the AQIA provides that a spontaneous combustion assessment of core samples has been conducted which *"concluded the risk of spontaneous combustion can be reduced to a level defined as 'low as reasonably possible' by implementing appropriate controls"*. The AQIA also provides some 4 measures which aim to minimise the oxygen exposure to potentially susceptible material.

Section 4.6 of the *Geochemical Impact Assessment for Coal and Mining Waste Materials* (GIA) provides that 13 drill core holes and 3 drill holes at the Project were subjected to a range of spontaneous combustion tests. Results indicate that coal materials from both the Ulan and Coggan coal seams have a medium to high intrinsic spontaneous combustion reactivity and propensity rating. The GIA further provides *"whilst the propensity of most coal and coal rejects from the Project can be managed, it is recommended that further*

testing of a wider range of samples be completed during the operational phase of the Project, to confirm these findings”.

Given that spontaneous combustion is an issue at Wilpinjong Coal Mine where the lower sections of the Ulan seam are currently being mined and as the EPA considers that the most appropriate method for controlling spontaneous combustion, is to prevent it occurring in the first instance, the EPA recommends that a detailed assessment regarding spontaneous combustion and management is requested by DPE.

Noise

The environmental impact statement and noise and blasting impact assessment stated that all feasible and reasonable mitigation and management measures had been incorporated into the project to reduce noise levels, and provided details of those measures.

The EPA's review of the Noise Impact Assessment (NIA) identified the following:

Noise Modelling

1. Significant winds from the SSW and SW were not modelled but were accounted for in the modelling approach used

- The CadnaA modelling package was used to model noise from the project, implementing the ISO 9613 and CONCAWE algorithms.
- The noise and blasting impact assessment identified dominant winds from east south east to south in the day time, from east south east to south during the evening, and from south east to west southwest during the night time.
- The winds included in the noise model for the Project generally reflected the identified dominant wind conditions, excepting that the south southwest and south west directions were not modelled for the evening or night time.
- In combination, the assessment indicated that the south southwest and south west winds were present in winter for 33% of the evening period and 34% of the night time period.
- Two identified sensitive receivers may be adversely affected by winds blowing from the south southwest or south west being the residences on properties 53 and 141.
- The CONCAWE algorithms separate meteorological effects into categories, effectively applying the same meteorological correction to received noise levels over a range of wind speeds. Wind speeds between 0.5 m/s and 3 m/s are in the same CONCAWE category.
- The modelled 3 m/s west southwest wind includes a southwest wind component of approximately 2.8 m/s and a south southwest component of approximately 2.1 m/s. Therefore the modelled 3 m/s west southwest wind covers the significant winds identified from the south southwest and south west.

2. Noise predictions should have been provided including a modifying factor adjustment for low frequency noise, in accordance with the New South Wales Industrial Noise Policy (EPA 2000)

- The noise and blasting impact assessment stated that adverse impacts from low frequency noise were considered only when the predicted L_{Ceq} minus L_{Aeq} noise level was greater than 15 dB and the L_{Ceq} noise level exceeded 60 dB. The approach used did not comply with the *New South Wales Industrial Noise Policy (EPA 2000) (INP)*.

- The assessment did not predict any L_{Ceq} noise levels above 60 dB and therefore a modifying factor adjustment for low frequency noise was not applied to any of the predicted noise levels.
- The environmental impact statement indicated that a modifying factor adjustment for low frequency noise was included in the sound power levels of modelled equipment, but the noise and blasting impact assessment did not appear to use this approach.
- The EPA considers that noise predictions should have included a modifying adjustment for low frequency noise in accordance with the INP and accordingly the predicted noise levels require alteration.

3. *Operational noise is predicted to exceed the project specific noise level at 20 sensitive receivers, which will need to be considered by Department of Planning and Environment under the Voluntary Land Acquisition and Mitigation Policy (NSW Government 2014)*

- When the EPA applies the required low frequency modifying factor adjustment to the model predictions, in accordance with the INP, this results in 20 residential sensitive receivers where predicted noise levels are above the project specific noise level. The *Voluntary Land Acquisition and Mitigation Policy* (NSW Government 2014) will therefore apply as follows:
 - six residences where noise will be up to 2 dBA above the project specific noise level;
 - seven residences where noise will be between 3 to 5 dBA above the project specific noise level; and
 - seven residences where noise will be more than 5 dBA above the project specific noise level.
- Noise limits are not proposed by the EPA for receivers 56, 60, 65A, 63, 68, 69 or 151 as they are predicted to receive operational noise from the Project which is more than 5 dBA above the project specific noise level. In accordance with the *Voluntary Land Acquisition and Mitigation Policy* those receivers are likely to receive acquisition rights, should approval be granted for the Project.
- The $L_{Aeq(15min)}$ and $L_{Ceq(15min)}$ predictions provided in the assessment were used to develop the proposed limits included in the recommended conditions of consent below and it should be noted that these limits include a low frequency modifying factor adjustment when the mine noise $L_{Ceq(15min)}$ is 15 dB or more above the mine noise $L_{Aeq(15min)}$.
- Due large the number of residential receivers affected by operational noise from the project above the project specific noise level, the EPA recommends that DPE include in any conditions of approval, if issued, requiring the Project sound power levels to be audited at defined intervals over time with the aim to determine any increases in noise levels during those periods.

4. *No model results were provided for properties 163, 262 and 263, but they are not likely to be sensitive receivers*

- On 14 October 2015, a landowner advised the EPA at a public meeting that the Project's noise model did not include their properties. That landowner owns part of properties identified in the noise and blasting impact assessment as 161, 162, 163, 262 and 263.
- The noise and blasting impact assessment included results for residences on properties 161 and 162.
- Results were not provided for properties 163, 262 or 263.
- Satellite imagery accessed by the EPA in Google Maps (accessed 2 November 2015) could not identified any buildings on properties 163, 262 or 263. The EPA considers it is unlikely to contain residential sensitive receivers.
- DPE may require modelling of noise impacts on properties 163, 262 and 263 though the EPA does not usually require modelling of noise contributions for vacant land.

Sleep Disturbance

- The noise and blasting impact assessment predicted that receiver 69 was the only location where the sleep disturbance screening criteria would be exceeded. Receiver 69 is also expected to be affected by operational noise more than 5 dBA above the project specific noise level, so is likely to receive acquisition rights in accordance with the *Voluntary Land Acquisition and Mitigation Policy* if the Project gains consent.

Construction Noise

- Construction noise associated with the project (road works off site) are expected not to exceed the 'highly noise affected' level in the *Interim Construction Noise Guideline* (DECC 2009), but to exceed noise management levels at a number of receiver locations. This triggers the consideration of mitigation measures, and the assessment adopted mitigation measures including restricting the road works to standard hours and implementing a construction noise and vibration management plan.

Rail Noise

1. The project's rail transport will increase the number of residences where rail noise levels are above criteria

- The noise and blasting assessment indicated that the project would result in a less than 2 dBA increase in $L_{eq}(\text{day or night})$ rail noise, but that total rail noise levels would be greater than the criteria in the *Rail Infrastructure Noise Guideline* (EPA 2013) at more residences.
- While the project related increase in rail noise is likely to be imperceptible, the Project will increase the number of residences where rail noise levels are above criteria by three in Denman and one in Muswellbrook.

2. Best practise rolling stock should be required for the project's rail transport

- The EPA recommends DPE consider requiring the proponent to use only best practise rolling stock for rail transport resulting from the proposal (including only locomotives which have obtained EPA approval to operate on the NSW rail network under Condition L2 of EPL No. 3142, 12208 or 13421, or in accordance with the former *Noise Control Act 1975*).

Blasting and Vibration

- The noise and blasting impact assessment predicted that ANZEC (1990) criteria can be complied with for blasts with a Maximum Instantaneous Charge of up to 3500 kg.

1. Construction vibration was not assessed against criteria from Assessing Vibration: a technical guideline (DEC 2006)

- The noise and blasting assessment did not assess construction vibration against *Assessing Vibration: a technical guideline* (DEC 2006), but provided peak particle velocity predictions up to 50 metres and proposed safe working distances based on structural damage.
- The EPA assesses vibration against amenity limits, not building damage criteria.

2. Construction vibration can be managed in a construction noise and vibration management plan

- Based on the information provided in the noise and blasting impact assessment, the "preferred" daytime vibration peak particle velocity level from *Assessing Vibration: a technical guideline* (DEC 2006) can be met at 134 metres, and the "maximum" level can be met at 79 metres.

- Reasonable mitigation measures for construction vibration were proposed in the assessment including increasing separation distances when feasible and reasonable, substituting lower vibration methods, a construction noise and vibration management plan and vibration monitoring.
- Distances between construction activities and residences are sufficiently large that, with the inclusion of the proposed mitigation measures, there should be no amenity impacts from the project's construction vibration.

Recommended Conditions of Consent (Noise)

The EPA's recommended conditions of consent for noise are contained in Appendix 2.

Surface Water

Site Water Balance

Table 47, section 7.4 of the EIS and section 6.3.1 of the *Surface Water Impact Assessment (SWIA)* provides that the overall site water balance for years PY3, 5, 7, 9 and 11 is based upon a single realisation (realisation 72) with median inflows. The mine water storage capacities for each of the proposed mine water storage dams are provided in Table 45 of the EIS and section 5.8 of the SWIA which were adopted for the water balance modelling.

It appears from the SWIA (section 5.3.2) that the simulation methodologies conducted for the site water balance are wide ranging and "*cover the full range of climatic conditions represented in historical rainfall records.*" The EPA considers that the site water balance for worst case dry and wet years should have been provided.

While it is noted that no spills from mine dams are predicted during median inflows, the EPA recommends that DPE request further information regarding wet year scenario's to confirm that the Project will in fact be a "nil discharge" premises during predicted wet years.

This is particularly important given that any potential discharge from the mine water dams may have elevated electrical conductivity (EC) levels and other contaminants; and require treatment to reduce those levels prior to discharge. Further, given the potential space limitations due to the topography surrounding the CHPP and the Open Cut MIA due to potential flooding, any required increase in mine dam capacity to ensure that the Project is "nil discharge" during wet years may require a revision of the proposed layouts for these infrastructure areas.

Sediment Dams

Section 7.4.1, pg 186 of the EIS and section 5.9.1 of the SWIA provides that sediment dams are proposed to be sized as "Type F" sediment basins with a settling zone volume based on the 90th percentile 5-day duration rainfall. In relation to discharges from sediment dams, EPA takes a conservative approach and requires sediment basins have a settling zone volume based on the 95th percentile 5-day rainfall duration. The EPA requests DPE require the proponent to take a conservative approach to the sizing of its sediment basins and adopt sediment basins have a settling zone volume based on the 95th percentile 5-day rainfall duration.

During any potential discharges from sediment dams, it should be noted the EPA will require compliance with pH, oil and grease and turbidity limits in addition to Total Suspended Solids (TSS). Any monitoring program developed for the Project should include pH, oil and grease and turbidity for discharges from sediment dams.

Page 190 of the EIS provides that *“available geochemical information indicates that the runoff draining to most of the sediment dams should have salinity consistent with receiving waterways”*. While it is noted that the majority of salt load included in the salt balance is due to groundwater inflows, the predicted salt load from surface water discharging into the Bylong River includes discharges from sediment dams. The EPA requests the DPE request additional information regarding the likely EC level for discharges from the proposed 6 sediment dams.

Clean Water Diversions

It is noted that a key objective of the water management system will be to maximise the diversion of clean water flows around the mining operations. From a site inspection of the Project area previously undertaken by the EPA, the extent of the slope the hill to the northeast of the CHPP was noted. All figures in the EIS which illustrate the CHPP and underground MIA do not include an indication of any proposed clean water diversions for these areas of the Project. The EPA requests additional information regarding surface water potential flows into the CHPP and underground MIA and how any potential flow will be managed.

Wastewater

Section 3.7.6 of the EIS provides that the design capacities of the three sewage treatment facilities are 33, 33 and 60 kl/day which are located at the open cut and underground MIA's and at the WAF. The effluent generated from the underground MIA is proposed to be pumped into the mine water management system (Section 3.6.3 of the EIS). Section 3.7.6 of the EIS provides that the effluent will be suitable for irrigation. This appears contradictory and the EIS does not indicate where the irrigation areas are located. The EPA requests DPE require additional information regarding effluent management confirming how it will be managed.

Waste

Section 6.1 of the GIA provides the following:

- Some of the coal reject material generated from processing coal from the Ulan and Coggan seams is likely to be PAF. This material will need to be well managed at the project to reduce the risk of AMD, NMD and saline drainage; and
- Some of the floor material from the Coggan seam is likely to be PAF and therefore there is some potential for parts of the final pit floor at the proposed open cut operation to be a source of AMD.

Section 7.4.3 pg 190 of the EIS provides there is a 50% chance of storing up to 1,330 ML in the Eastern open cut mining area. Section 7.20.4 provides that *“provisions for the treatment of potential acid water in underground workings or in the open cut workings eg mobile lime dosing plant or broadcast application of agricultural lime”*.

The EPA has not been able to identify whether the Eastern open cut mining area proposed to be used for storage is likely to contain PAF within its floor and therefore requests clarification as to the predicted location of the PAF material in the open cut areas. The EPA is also concerned about how potentially contaminated in-pit water will be managed given that the GIA indicates that the management of such water will be determined as part of a management plan.

The EPA requests the DPE require clarification as to how this issue will be managed in a practical manner to prevent any potential impacts to groundwater, including the potential impact of returning water from the East pit void underground.

Further, the EPA notes the monitoring and management measures included in Ref. 58 of section 8 of the EIS. The EPA recommends that DPE that these form conditions of the consent rather than simply be addressed as part of a mine waste management plan.

ATTACHMENT 2 – EPA RECOMMENDED CONDITIONS OF CONSENT BYLONG COAL PROJECT

Noise, Vibration & Blasting

Limit Conditions

L6.1 Noise generated at the premises must not exceed the noise limits in the table below. The locations referred to in the table below are indicated by Figure 2.5, Figure 2.6 and Table A-1 of the *Bylong Coal Project – Noise and Blasting Impact Assessment* (Pacific Environment Operations Pty Ltd July 2015).

Receiver ID	Location including MGA94 Zone 56 coordinates in metres (Easting, Northing)	NOISE LIMITS dB(A)			
		Day	Evening	Night	
		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Amax} (15 minute)
57A and 57B	(225827,6408534) and (225736,6408534)	39	39	39	45
57C	(225826,6408529)	38	36	36	45
58	(226848,6408342)	38	38	38	45
141	(235184,6406104)	40	40	40	45
158	(230384,6400727)	40	40	40	45
161	(230854,6400087)	40	40	40	45
181A, 181B and 181D	(224814,6407172), (224845,6407060) and (224978,6406981)	37	35	35	45
181C	(224812,6406984)	37	37	37	45
225 and 292	(226224,6402091) and (225257,6402067)	36	35	35	45
Any other	Any privately owned residential sensitive receiver not included above and not subject to a private negotiated agreement	35	35	35	45

- L6.2** For the purpose of condition L6.1:
- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
 - Evening is defined as the period 6pm to 10pm.
 - Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

- L6.3** The noise limits set out in condition L6.1 apply under all meteorological conditions except for the following:
- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
 - b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
 - c) Stability category G temperature inversion conditions.

<Insert point number into conditions L6.4 and M7.2>

- L6.4** For the purposes of condition L6.3:
- a) Data recorded by the meteorological station identified as EPA Identification Point <?> must be used to determine meteorological conditions ; and
 - b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

- L6.5** To determine compliance:

- a) with the $L_{eq}(15 \text{ minute})$ noise limits in condition L6.1, the noise measurement equipment must be located:
 - approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
 - within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
 - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
- b) with the $L_{A1}(1 \text{ minute})$ noise limits in condition L6.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.
- c) with the noise limits in condition L6.1, the noise measurement equipment must be located:
 - at the most affected point at a location where there is no dwelling at the location; or
 - at the most affected point within an area at a location prescribed by conditions L6.5(a) or L6.5(b).

- L6.6** A non-compliance of condition L6.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:
- at a location other than an area prescribed by conditions L6.5(a) and L6.5(b); and/or
 - at a point other than the most affected point at a location.

- L6.7** For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Blasting Conditions

Airblast overpressure level

- L7.1** The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.
- L7.2** The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

Ground vibration level

- L7.3** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.
- L7.4** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

Blasting hours

- L7.5** Blasting at the premises may only take place between 9:00am-5:00pm Monday to Friday. Blasting is not permitted on public holidays.
- L7.6** Blasting outside of the hours specified in L7.5 can only take place with the written approval of the EPA.

Blast monitoring

Condition L7.7 should be negotiated by DPE with the proponent and the EPA prior to issuing any approval>

- L7.7** To determine compliance with condition(s) L7.1 to L7.4:
- Airblast overpressure and ground vibration levels experienced at the following noise sensitive locations must be measured and recorded for all blasts carried out on the premises;
 - <enter exact location - consider ANZEC guidelines. Lot & DP, street address identifiers should be used >.
 - Instrumentation used to measure and record the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

NOTE: A breach of the licence will still occur where airblast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in conditions L7.1 to L7.4 at any "noise sensitive locations" other than the locations identified in the above condition.

- L7.8** The airblast overpressure and ground vibration levels in conditions L7.1 to L7.4 do not apply at noise sensitive locations that are owned by the licensee or subject to a private agreement, relating to airblast overpressure and ground vibration levels, between the licensee and land owner.

Monitoring Conditions

<Conditions M7.1 to R4 should be negotiated by DPE with the proponent and the EPA prior to issuing any approval>

- M7.1** The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in condition M7.2.
- M7.2** For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Point **<insert point number as listed in table P1.1>**

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Air temperature	°C	Continuous	1 hour	AM-4
Wind direction	°	Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	°	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative humidity	%	Continuous	1 hour	AM-4

M8 Requirement to Monitor Noise

M8.1 To assess compliance with Condition L6.1, attended noise monitoring must be undertaken in accordance with Conditions L6.5 and:

- at each one of the locations listed in Condition L6.1;
- occur **<Quarterly, bi-annually or annually>** in a reporting period;
- occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:
 - 1.5 hours during the day;
 - 30 minutes during the evening; and
 - 1 hour during the night.

- d) occur for three consecutive operating days.

Reporting Conditions

R4 Noise Monitoring Report

A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the <quarterly, bi-annual or yearly> monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits presented in Condition L6.1; and
- b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L6.1.

Additions to Definition of Terms of the licence

- NSW Industrial Noise Policy - the document entitled "New South Wales Industrial Noise Policy" published by the Environment Protection Authority in January 2000.
- Noise – "sound pressure levels" for the purposes of conditions L6.1 to L6.7.
- "Noise sensitive locations" includes buildings used as a residence, hospital, school, child care centre, places of public worship and nursing homes. A noise sensitive location includes the land within 30 metres of the building.

