



Mr Howard Reed
Manager Mining
Major Development Assessments
GPO Box 39
SYDNEY NSW 2001

Attention: Stephen O'Donoghue

Dear Mr Reed

PROPOSED MAULES CREEK COAL PROJECT (10_0138) – REVIEW OF PUBLICLY EXHIBITED ENVIRONMENTAL ASSESSMENT REPORT

I refer to the Project Application, Environmental Assessment, and accompanying information provided for the proposed Maules Creek Coal Project received by the Office of Environment and Heritage (OEH) on 29 August 2011.

OEH has reviewed the information provided (Maules Creek Coal Project Environmental Assessment, July 2011 – Volumes 1-5). **Attachment 1** provides detailed comments on the proposal. It is noted that a number of the issues raised in OEH's submission (letter dated 30 March 2011) for the adequacy check stage of the proposal still require additional assessment, particularly in relation to noise mitigation and biodiversity offsets.

Please note that this submission does not include comments from the "Office of Water" who will be providing a separate submission to Department of Planning & Infrastructure (DoPI).

It is expected that OEH will be given an opportunity to review the draft Director General's Environmental Assessment Report for this proposal. If the amendments to the draft Statement of Commitments are not included to the satisfaction of OEH, we will be recommending that they are included as Conditions of Approval, if approval is recommended by the DoPI.

It is noted that the project will need an environment protection licence (EPL) under the Protection of the Environment and Operations (POEO) Act 1997 to operate the proposed mine extension. The proponent (Aston Coal 2 P/L) will need to make a separate application to OEH to obtain this licence if development project approval is granted.

Where relevant, OEH would also appreciate receiving a copy of the submissions received by the DoPI (or a report summarising these submissions) received in response to the exhibition of the Environmental Assessment. This is to assist OEH to review the draft Director General's Report and to recommend conditions of approval, if required.

The OEH continues to be concerned that the issues raised in the meeting between OEH, Aston, neighbouring mine operators and DoPI on 28 October 2010 concerning noise, dust, biodiversity offset, mine planning (including linkages and design with neighbouring mines) have not been fully explored by the Maules Creek Coal Project. It is understood however that Aston are continuing to work with neighbouring mines and adjoining property owners to seek suitable agreements and / or purchase affected resident to resolve off site mine impacts.

In summary, from the information presented in the EA, OEH is of the opinion that the most significant environmental issues are:

- Ensuring construction and operations meet proposed noise criterion in accordance with the Industrial Noise Policy;
- Final rehabilitation of the mine site and management of salt in the surface environment;
- Minimising the size and need for a separate final void at the end of mining (21 years) by combining with adjoining coal projects;
- Need to minimise impacts on biodiversity and further development of an adequate biodiversity offset; and
- Undertaking rigorous environmental monitoring to demonstrate that proposed objectives and targets for the proposal are met.

If you have any questions, or wish to discuss this matter further please contact Robert O'Hern in the Armidale office on 6773 7000.

Yours sincerely



ROBERT O'HERN
Head Regional Operations Unit - Armidale
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet

Enclosed:

Attachment 1 – OEH Submission on Proposed Maules Creek Coal Project – Key issues and comments on Draft Statement of Commitments

ATTACHMENT 1- OEH Submission for Proposed Maules Creek Coal Project
Key issues and comments on Draft Statement of Commitments

NOTE: While Attachment 1 is not an exhaustive list of issues identified by the OEH, it identifies the most significant inadequacies within the EA. It is expected that an additional submission will be made available to the Planning Assessment Commission to be convened for the Maules Creek Coal Project later in 2011.

A. NOISE ASSESSMENT

Issue 1: Operations are predicted to exceed noise criterion

During a meeting between OEH, Aston (including their consultants), and DoPI on 28 October 2010 Aston was encouraged to negotiate agreements or purchase receptors where impacts were predicted to be beyond the Project Specific Noise Levels (PSNLs) (referred to as the Intrusive Criteria in the EA) defined in accordance with the *NSW Industrial Noise Policy (INP)*. Maules Creek is a "Greenfield Site" and Aston must make every effort to minimise noise impacts on the quiet surrounding rural community.

During the meeting, OEH and DoPI advised Aston that the establishment of noise limits above the PSNLs could only be considered where all reasonable and feasible noise mitigation measures have been applied and bona-fide attempts to negotiate agreements with (or purchase) affected receptors had failed. The EA does not provide an economic or social benefit justification of the need for any noise limits to be set above the PSNL.

The EA submits that "all reasonable and feasible" noise mitigation measures have been applied as part of the assessment of the project. It is concluded in the EA that additional noise mitigation of equipment would only achieve minimal improvement (i.e around 0.5 dB(A)) but would come at significant additional cost.

As application of "all reasonable and feasible" mitigation measures are claimed to be unable to attain compliance with the PSNL, Aston has chosen to seek purchase agreements with affected resident rather than spend additional monies for minimal acoustic improvement. OEH encourages Aston to continue to seek purchase / noise agreements with affected receptors where compliance with the PSNL can not be achieved by noise attenuation or operational modifications to the mine.

It is noted that a Real Time Noise Monitoring System (RTNMS) is proposed for the Maules Creek, Boggabri and Tarrawonga Mines as a management tool for noise. OEH expects that the RTNMS will be a useful tool to ensure compliance with the PSNL and identify noise mitigation and / or negotiated agreements with affected receptors should they be identified during mine operation.

Further details on how the RTNMS will operate are required – for example trigger levels and types of management actions to be implemented. Some information is provided in the EA but a detailed operational procedure for the RTNMS will be necessary to ensure it is used effectively to reduce and manage noise at the mine and along the coal haul route.

Recommendation:

OEH recommends that a PSNL of 35 LAeq,15min day, evening and night and 45 LA1,1min night be required as a condition of consent.

OEH recommends that the Real Time Noise Monitoring System be required as a management tool to monitoring increasing noise impacts as the mine progresses and as a trigger for further noise mitigation measures and / or negotiated agreements or purchase of impacted receptors. A detailed operational procedure should be required for the RTNMS.

OEH recommends that where the PSNL is predicted to be exceeded at any residence, Aston be required to purchase or negotiate an agreement with the affected receptors in accordance with the Industrial Noise Policy prior to commencement of mining operations at the premises. (Note the INP

does provide a process for OEH to consider an alternative PSNL for an individual receptor in the extraordinary situation where an exhaustive negotiation process can not reach agreement with an affected receptor and the success of the project is threatened. There is no evidence in the EA or through discussion with Aston that this is the case with the Maules Creek Coal Project.)

Issue 2: Table 9 – Four Examined Noise Control Cases

Table 9 of the 'Acoustics Impact Assessment – Maules Creek Coal Project Environmental Assessment' (AIA) shows predicted noise levels for Four examined noise control cases. Further information should be provided as to why the predicted noise levels for Case 2 (noise control) are higher than those for Case 1 (no noise control) for Residence ID 61, 256 and 259, and Property ID 120. If the two cases involve the same equipment inventory, locations and atmospheric conditions, the noise control case should be lower than the no noise control case.

Recommendations:

OEH recommends that further information be provided as to why the predicted noise levels for Case 2 (noise control) are higher than those for Case 1 (no noise control) for Residence ID 61, 256 and 259, and Property ID 120.

Issue 3: Rail Noise

OEH does not concur with the Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (IGANRIP) rail traffic noise criteria adopted in the AIA. The criteria for Rail-Traffic Generating Developments on OEH's website should have been used. We note that lack of data on the day / night distribution of rail traffic is cited as the reason for an incomplete evaluation against the criteria.

Recommendation:

OEH recommends that Rail traffic noise be reassessed against the criteria for rail-traffic generating developments on the DECCW website at:

<http://www.environment.nsw.gov.au/noise/railnoise.htm>.

The AIA does not provide adequately consideration of the number of potentially affected residences along the "public" rail network, nor an assessment of feasible and reasonable measures to mitigate against the predicted rail noise increases.

Issue 4: Sleep disturbance

OEH notes that Section 4.8.3 of the AIA states the sleep disturbance screening criterion may be exceeded at some residences. However, further analysis, as per the INP Application Note on the OEH website, was not undertaken. Feasible and reasonable noise mitigation and management should be considered at these residences with a view to reducing predicted maximum noise levels below the sleep disturbance criteria.

Recommendation:

OEH recommends that the proponent implement all necessary noise mitigation measures to minimise sleep disturbance. Where the INP criteria of 45 LAeq1,(1min) can not be achieved at any receptor, Aston should be required to reach an agreement to purchase or negotiate agreements with that receptor to address the exceedance.

Issue 5: Statement of Commitments for Noise

SOC 9 – "Aston will implement the necessary noise control and management measures to ensure that the EA predicted noise levels at private receivers as listed in Table 23 are not exceeded".

Comment:

OEH does not agree that the noise levels set in Table 23 of the EA should be set as noise limits for the Maules Creek Coal mine. Aston has made significant progress on reaching agreement with or

purchase of properties affected by noise from the project noise predictions. Further, there is sufficient time in the lead up to the mine's commencement to develop and adopt additional reasonable and feasible noise mitigation measure, modify mine operations and / or reach a negotiated agreement (or purchase) with receptors affected by noise to allow compliance with the PSNL set by the INP.

Recommendation:

OEH recommends that the noise limits (i.e. PSNL of 35 LAeq,15min day, evening and night and 45 LA1,1min night) be applied to the Maules Creek Coal Project and Aston be required to implement all reasonable and feasible mitigation measures noise mitigation measures to reduce noise impacts and purchase or negotiate agreements with affected receptors where these limits can not be achieved.

B. AIR MANAGEMENT

Issue 6: Project-alone increment is likely to exceed the 24-hr PM₁₀ criterion at nearby receptors to the north

Ambient monitoring shows high background concentrations of PM₁₀ (24-hr averages) in the region that exceed the OEH criterion (50 µg/m³). In addition, several receptors located to the north of the Project boundary are predicted to experience particulate concentrations above the criterion due to project-alone emissions. All of these six receptors (108, 111a, 116, 118a&b, 122 and 126) are privately owned and mostly located to the north of the Project boundary.

Recommendation / Comment:

Aston has obtained purchase agreements for two of the sensitive receptors.

Issue 7: Several privately-owned properties are predicted to experience exceedances in the OEH particulate criteria on more than 25% of their land area

The maximum *project-alone 24-hr average* PM₁₀ concentration at fifteen private properties (including residential, land-only types of properties) and *cumulative annual average* PM₁₀ concentration at four private properties are predicted to exceed the respective OEH criteria (50 µg/m³ and 30 µg/m³). These privately-owned properties will likely experience high particulate impacts on greater than 25% of their land area.

Recommendation / Comment:

OEH is of the view that installation of the PM₁₀ monitor and availability of data would assist in managing PM₁₀ impacts.

Issue 8: Cumulative Air Impacts

The assertion "absence of northern winds" at the Maules Creek Mine is based on insufficient contemporaneous observed meteorology for the entire region

The Air Quality Impact Assessment (AQIA) (pp 16) states: "*the Maules Creek AWS data does not display the dominant northerly component that is prevalent in the Boggabri Coal Mine AWS and Tarrawonga Mine AWS data which suggests that the terrain feature between the Project Boundary and Boggabri Coal Mine results in drainage flow at the Boggabri Coal Mine which is not prevalent at Maules Creek and the terrain is steering and channelling in different ways at the two sites. This is an important consideration when assessing the cumulative impacts from the contemporaneous operations at both sites*".

This statement implies that emissions from the Maules Creek mining operations are unlikely to contribute to cumulative impacts in combination with mines located to the south, due to the absence of northerly winds that traverse the Maules Creek Mine on way south. OEH does not consider this conclusive because the possibility of Maules Creek receiving northern winds that would contribute to cumulative impacts with other regional mines (and impact on receptors to the south) cannot be ruled out for the following reasons:

- Meteorological data available for Maules Creek at time of preparation of the AQIA was incomplete (less than an year), while for Boggabri and Tarrawonga Coal Mines they were either incomplete or not contemporaneous with the Maules Creek observations, even if complete.
- Based on the observed northern influence at other sites in the region (e.g. Narrabri Airport) there appears to be a northerly wind influence over the entire region, which could also be the case at Maules Creek if contemporaneous data were to be compared. In fact, summer and autumn wind roses predicted by CALMET do show strong winds from the north (wind speed > 7.5 m/s; Figure 5.4 AQIA). Short-term (24-hr) contour plots predicted on the basis of this CALMET-generated meteorological data show predominant dispersion to the south-southwest sector as would be expected from a northern wind regime (see Fig 8.1–8.4, pp 40-43).
- Even if Boggabri and Tarrawonga do experience strong drainage flows due to the terrain feature to their north, these flows would generally be a nocturnal-to-early morning feature only. It is quite possible that the terrain feature largely determines the northerly influence, but that does not discount the possibility that at *other times of the day* the Boggabri and Tarrawonga Mines could receive northerly winds that are not due to drainage flows (but from the northern sector nevertheless). In this case, winds from the northern sector would have likely traversed the Maules Creek Mine.

Recommendation:

OEH recommends that the Air Quality Impact Assessment be reassessed to determine if northerly winds do impact the Maules Creek project and as a result will contribute to cumulative impacts with other regional mines and impact on receptors to the south.

OEH considers that cumulative impacts due to the operations at Maules Creek, Boggabri and Tarrawonga Coal Mines is an important issue to address in the successful management of air quality in the wider region, and recommends that all measures that have been proposed to address the issue of cumulative regional be implemented.

Issue 9: Regional Air Impacts and Best Practice Management

The Project's contribution to regional cumulative impacts is likely to be significant during highly dispersive daytime and summer conditions

Boundary layer meteorology varies with time of day, with higher mixing heights observed during the highly convective daytime period. Therefore, irrespective of wind direction, inter-mixing of emissions from either side of the terrain feature would occur and cumulative impacts from the various mining operations in the region would be significant during such dispersive conditions. This phenomenon would also be observed on the seasonal scale with higher boundary layer depths and highly convective conditions typical of the summer season.

Changing "active mining" areas may increase the Project's contribution to cumulative regional impacts

The Maules Creek Coal Mine Project Boundary extends beyond the terrain feature, and will encroach flat terrain to the south west where active mining will be undertaken at some point in the life of the mine (Figure 2.3 AQIA). The Boggabri Coal Mine has a parallel Project Boundary to the south west. If active mining were to occur contemporaneously at both these mines, the close proximity of these operations would exacerbate adverse regional cumulative impacts.

OEH proposes that a *Regional Air Quality Management Plan* must be put in place prior to the commencement of this Greenfield mining development.

The AQIA proposes particulate mitigation and management measures such as *real-time particulate monitoring network, on-site weather station, and a meteorological and air quality forecasting system* (Section 11). These should be used to conduct a *Site-specific Best Management Practice (BMP)* determination and develop a *Reactive Particulate Management Strategy* for the Project. Also,

proposed measures such as *extensive regional monitoring network and cooperative discussions with adjacent mining operations* intended for the *Regional Air Quality Management Plan* should be pursued urgently.

Recommendation:

As approval conditions for the proposal, OEH recommends that the Aston provide:

1. a Project **Air Quality Management Plan** incorporating the site-specific **Best Management Practice (BMP)** Report (see **Attachment 2**) and **Reactive Particulate Management Strategy** (see **Attachment 3**); and,
2. a **Regional Air Quality Management Plan**, prepared in consultation with the local community and adjoining mines (see **Attachment 4**).

C. THREATENED SPECIES/ BIODIVERSITY

The EA requirements of OEH and DoPI require proponents to present justification of their preferred option based on four key thresholds – including *'whether or not the proposal, together with actions to avoid or mitigate impacts or compensate to prevent unavoidable impacts will maintain or improve biodiversity values'*. We also note that the DoPI Director-General's requirements for the EA include the provision of *'an offset strategy to ensure the project maintains or improves the biodiversity values of the region in the medium to long term (in accordance with NSW and Commonwealth policies)'*.

OEH also evaluates offset proposals against the OEH *'Principles for the use of biodiversity offsets in NSW'* and, where applicable, the *'Interim Policy on assessing and offsetting biodiversity impacts of Part 3A developments'*.

Our review of the draft Environmental Assessment (EA) has concluded the requirements of OEH relating to biodiversity issues have not been met. Specifically:

- a) **Avoid** – No specific comments at this time. We note that some measures to avoid impacts on native vegetation have been included in the design of the project.
- b) **Mitigate** – No specific comments at this time.
- c) **Offset** - The current Biodiversity Offset Strategy remains inadequately defined and justified.

Further details and recommendations are provided below.

Issue 10: Assessment of Impacts

It is not clear whether the Assessment of Significance has included consideration of indirect impacts. It is also not clear what methodology the proponent has used to determine areas of derived native grassland which are considered to be part of the *Threatened Species Conservation Act 1995* (TSC Act) listed White Box, Yellow Box, Blakely's Red Gum Woodland (Box-Gum Woodland).

Background:

The EA outlines possible indirect effects associated with the proposal, including fragmentation, edge effects, dust, noise and light.

The EA also makes some assessment of the area likely to be affected by indirect impacts (Table 4.3, Ecological Impact Assessment). In summary:

- o Direct impact on forest and woodland habitats is estimated at 1665ha. Consideration of indirect impacts (1063ha) increases this area to 2728ha.

- Direct impact on forest, woodland and grassland habitats is estimated at 2079ha. Consideration of indirect impacts (1294ha) increases this area to 3373ha.
- Direct impact on Box-Gum woodland is estimated at 544ha. Consideration of indirect impacts (400ha) increases this area to 944ha.

It is not clear how the extent of indirect impacts was determined. In all cases the total area of impact estimated (ie direct and indirect impacts) is equal to the estimated full extent of the habitat/community within the Project Boundary.

It is also not clear whether indirect impacts have been considered within the Assessment of Significance. Similarly, consideration of the cumulative impacts of mining proposals in the area appears to consider direct impacts only.

Secondly, the EA defines 'Derived Native Grassland', which the proponent considers to be EEC, and 'Low Diversity' derived native grassland (White Box Woodland), which the proponent does not consider to be EEC. It appears that the assessment of which grassland constitutes the EEC has been based on the Commonwealth guidelines. Please note that 'low diversity' derived native grassland which does not meet the Commonwealth criteria for the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listing may still meet the TSC Act definition. In conjunction with the Final Determination for the state-listed Box-Gum Woodland EEC, we encourage proponents to use identification guidelines which can be found here:
<http://www.environment.nsw.gov.au/resources/nature/box-gumIdGuidelines.pdf>

Recommendation:

That the proponent be required to:

- Detail the methodology by which the extent of indirect impacts was calculated.
- Clarify the extent of impacts considered within the Assessment of Significance and cumulative impact assessment.
- Clarify the methodology used to determine the presence of the TSC Act listed Box-Gum Woodland EEC.

Issue 11: Offset Proposal

Based on the information provided, the proposed offset is inadequately detailed. The EA has not:

- a) Proposed offsets underpinned by sound ecological principles.
- b) Adequately quantified the loss in biodiversity and the gain in biodiversity from the offset with impact and benefits reliably estimated.
- c) Adequately demonstrated that the proposal will maintain or improve biodiversity values.
- d) Fully demonstrated that the proposed offset has been appropriately targeted.
- e) Fully demonstrated that the proposed offset will be appropriately secured in perpetuity.

Background:

- *Inconsistent information presented*

Overall, the proposed Biodiversity Offset Strategy (BOS) has not been well communicated. The EA states that over 6,400ha of forest, woodland and grassland will be included in the proposed offset. However page 7.2 of the Ecological Impact Assessment claims that over 8000ha is proposed for permanent conservation. Varying figures are also provided for some components of the offset

throughout the EA, leading to conflicting hectare totals (particularly in relation to the Northern offset properties).

There also appears to be some conflicting information in relation to ratios. For example Section 6.7.3 of the Ecological Impact Assessment states that the Biodiversity Offset Management Plan will include *'Provision of land that contains or could be regenerated to provide Ironbark Forest, Dwyer's Red Gum Woodland and other non-EEC vegetation at a ratio of 3:1'*. Considering direct impacts alone, this would mean that the offset would need to include approximately 3629ha of 'non-EEC' native vegetation. However the EA indicates that approximately 2000ha to 2300ha (depending on which figures are used from the EA) of 'non-EEC' native vegetation is proposed to actually be included within the offset properties.

OEH recognises that the EA has been revised to include more detail regarding mapped vegetation types on the offset properties. However when compared with relevant text throughout the document, the offset maps are misleading.

For example, *Figure 6.2 'Vegetation of the Western Offset Properties'* and *Figure 6.3 'Vegetation of the Eastern Offset Properties'* depict the vegetation and land uses mapped to date within the subject property boundaries. These maps are misleading as they encourage the reader to overestimate the extent of the proposed offsets and the linkages to be created. From elsewhere in the text of the EA it appears that within these properties:

- The vegetation within the Mining Lease is excluded from the offset;
- The offset will not include 'prime agricultural land';
- Only approximately 1000ha out of 2291ha of native vegetation mapped on the Eastern and Western Offset properties will be included in the offset.
- Most of the Derived Native Grassland within the Eastern and Western Offset properties is described as 'low diversity' and not included within the offset (except for the Northern offsets where it appears 'low diversity' derived native grassland is included in the offset).
- The hectare calculations for the Northern offsets appear to include exotic pasture.
- 50% of the 'Shared Offset Property' will be included in the BOS.

Mapping of the specific parts of the subject properties that will be included within the offset would allow greater clarity regarding the proposed BOS and the linkages to be created.

As noted above the EA also makes some assessment of likely indirect impacts, however it appears that only direct impacts have been considered in the calculation of offset to impact ratios.

- *Offsets must be based on sound ecological principles*

The OEH supports the proponent's exclusion of mine rehabilitation from the offset calculations. However we note that the offset also includes derived native grassland (classified as EEC). Within the Northern offsets 'low diversity' derived native grassland and exotic pastures are also included in the hectare calculations. Due to information gaps in the EA the proportion of the offset for Box-Gum woodland that consists of restoration of derived native grassland is not clear, however it could be as high as approximately 42%. The proportion of the overall offset that consists of Derived Native Grassland, 'low-diversity' derived native grassland and exotic pasture also appears to be approximately 46%. Reconstruction of ecological communities involves high risks and uncertainties for biodiversity outcomes and is generally less preferable than other management strategies, such as enhancing existing habitat.

- *Offsets should aim to result in a net improvement in biodiversity over time. They must be appropriately targeted and quantifiable, and the impacts and benefits must be reliably estimated.*

However the EA:

- *Has not provided relevant information supporting the quantum of the offset proposed.*

Enhancement of biodiversity in offset areas should be equal to or greater than the loss in biodiversity from the impact site and be based on quantitative assessment of losses and gains. The methodology must be based on the best available science, be reliable and used for calculating both the loss from the development and the gain from the offset.

The EA does not present any specific scientific methodology used to determine the size of the offset required and indicate whether the proposal will 'maintain or improve' biodiversity values overall. The EA has only considered the expected increase in the extent of native vegetation and the extent of native vegetation under conservation tenure. The issue to be addressed is the degree to which the BOS offsets the biodiversity losses from the development site.

Whilst page 29 of the EA states that *'The NSW BioBanking Scheme and associated tools, developed by OEH (DEC2008b) have been used as a guide to developing the biodiversity offset requirements for the Project'*, there is no evidence supplied in the EA of the use of the BioBanking Assessment Methodology (BBAM).

- *Presents insufficient information regarding the condition of the impact and offset sites. Such data is essential to calculate the offset required for the loss.*

An offset is obtained by changing the management of a site to improve the status and security of biodiversity. Hence the likely change in the current condition of the site that results from the proposed management is important in determining the adequacy of an offset rather than relying on a strict offset to impact comparison in hectares only.

In Table J.1, the condition of the existing woodland and forest is noted to be 'high' in terms of habitat for EPBC Act species (Regent Honeyeater, Swift Parrot and Greater Long-eared Bat), whilst the remaining areas of derived native grassland on all properties are described as low condition. Some of the vegetation types to be impacted within the project site are noted to be in 'moderate to good' condition, whilst no information is included for others. The EA has not applied a consistent quantitative methodology to both the development and offset sites to allow comparison of the expected losses and gains.

OEH agrees that there is potential for the identified 'Northern' properties, parts of the 'Western' properties, and 'Property F' within the 'Eastern' properties to contribute towards a suitable offset. However in the absence of sufficient quantitative information about the proposed offsets, availability of other suitable sites and the conservation management to be applied, OEH is unable to provide detailed comments on the overall acceptability of the current BOS and the extent to which it compensates for the loss resulting from the project.

- *Does not yet contain sufficient information regarding the provision of a 'like for like or better' conservation outcome.*

Offsets must also address impacts on a basis of 'like for like or better' conservation outcome. This means that offsets should be targeted according to biodiversity priorities in the area and based on: the conservation status of the ecological community, the presence of threatened species or their habitat, connectivity and the potential to enhance condition by management actions and the removal of threats. Only ecological communities that are equal or greater in conservation status to the type of ecological community lost can be used for offsets.

The EA has considered, in very general terms, the potential for offset sites to provide habitat for the threatened species to be impacted by the proposal however no detailed assessment has

been made. The extent of habitat potentially available is only specifically noted for EPBC Act listed species and EEC.

Similarly, only general information regarding the vegetation communities within the 'Northern Offset' properties has been presented, and portions of the Eastern and Western offset areas remain listed as 'unclassified grassland' (972ha in total). Again, offset also seems to incorporate exotic pastures.

It also appears that at least two vegetation types to be impacted '*River red gum riparian woodlands and forests*' and '*Pilliga box, poplar box, white cypress pine grassy open woodland*', are likely to be overcleared vegetation types. The EA does not indicate whether this has been considered.

Furthermore, whilst the EA states that the offset will improve connectivity, this is difficult to assess without a clear map of the areas that will actually make up the offset. Regarding the 'Eastern Offset' properties, OEH is of the view that this area is of lower priority in terms of providing improved connectivity. There may be potential for provision of a worthwhile offset on 'Property F' (Figure 6.3). However, given the Mining Lease area and existing agricultural land, there appears to be little scope for providing an appropriately designed offset on the remaining 'Eastern Offset' properties. This has already been communicated at a meeting held between the proponent, OEH and DoPI.

As previously advised in relation to the Boggabri Coal proposal, the Leard State Forest has irreplaceable, ecologically unique values, including the highest quality remnant patch of grassy woodland on the heavily-cleared Liverpool Plains. Its large size, fertile soils, relatively undisturbed habitat and high diversity of fauna and flora also contribute to its exceptional ecological value. The Maules Creek EA indicates that:

- The project will impact upon approximately 36% of forest and woodland within the Leard State Forest (ie combined direct and indirect impacts of 2728ha (Table 4.3) out of 7500ha (page 4.37)). The combined impacts of mining could impact on 60% of extant forest and woodland (page 4.32).
- The project is likely to have a significant impact on the majority of threatened fauna species considered in the assessment (ie 20 out of the 23 TSC Act species assessed), impacting on up to 3373ha of habitat (combined estimated direct and indirect impacts). The project will also impact 944ha of Box-Gum Woodland EEC.

Considering the substantial impacts of the Maules Creek proposal, and the cumulative impact of mining in general within the forest and surrounds, it is not acceptable for the proponent to offer an offset that is inadequately detailed, includes a high proportion of restoration works, and has not been properly assessed or justified.

- *Future management of the proposed offsets*

According to the EA, the proponent is considering OEH Estate addition, private ownership with conditions on title, or development approval conditions as methods of securing the offset. OEH recommends the following mechanisms and instruments to proponent for securing offsets in the first instance:

- BioBanking Agreement, Statement, or retiring of credits;
- Dedication to the Public Reserve System (where agreed to by OEH);
- Conservation Agreement;
- Trust Agreement; or
- Planning Agreement.

Please note that OEH does not support the securing of offsets via approval conditions only.

Recommendation:

- a) Considering the extent and significance of the impacts of this proposal, OEH strongly recommends that the proponent be required to prepare a detailed offset strategy which:
- Proposes a clearly presented and well-designed offset, the quantum of which is justified by a suitable metric (preferably BBAM) and at a minimum properly considers OEH's *'Principles for Biodiversity Offsets in NSW'*;
 - Incorporates consideration of the likely indirect impacts of the proposal.
 - Considers the conservation value of all vegetation types to be impacted.
 - Adequately assesses the condition of both the impact and proposed offset sites.
 - Increases the proportion of the offset that involves protection, management and enhancement of existing remnant vegetation relative to rehabilitation/restoration works.
 - Provides details on the land use history of areas of any derived native grassland proposed as offsets, including cultivation history, fertilizer application and groundcover species present (native and exotic), along with information relating to elevated soil nutrients, such as with nitrate, ammonium, available phosphorus and total carbon, in order to inform the suitability of the sites for inclusion in the offset and understand the capacity of the system to respond to management.
 - Includes suitable legal, in-perpetuity protection of the offset.

D. ABORIGINAL HERITAGE

OEH has not yet completed a detailed review of the Aboriginal Heritage assessment contained in the EA. This will be forwarded to DoP shortly. However, the following general observations are offered for consideration.

Issue 12: Care and Control of Aboriginal objects

Under s85a of the NP&W Act Aboriginal objects remain the property (and under the protection) of the Crown until formal transfer to an Aboriginal group occurs. Clear and certain direction must be provided to OEH regarding the proposed impact, salvage and long term care of Aboriginal objects. Likewise, it must be clearly demonstrated that consultation with the Aboriginal community has occurred, and the results of this consultation must be clearly communicated to OEH including the provisions of documentary evidence of Aboriginal community understanding and support for all measures proposed. To effect proper transfer of Aboriginal objects to local Aboriginal communities it is necessary that an application for a Care and Control Agreement (CCA) be made to OEH. CCA Application forms can be downloaded from the OEH website located at:

<http://www.environment.nsw.gov.au/licences/CareAgreementApplicationForm.htm>

A CCA is required before any long term storage of any Aboriginal objects within a "Keeping Place" can occur. Also, where for operational reasons objects are not (or cannot be) provided immediately into the Care and Control of the Aboriginal community but are, for example, held in a secure temporary storage facility within the Project area, then it is usual for OEH to require that:

- the form, location, security and access arrangements to the temporary storage facility is identified;
- time limits be placed on the duration of the 'temporary' storage and a date set by which all necessary arrangements for formal transfer to the local Aboriginal community must be completed; and that
- a clearly defined strategy for the subsequent transfer to the Aboriginal community is articulated.

In the current regulatory framework, the issuing of a s85 Care and Control Agreement for salvaged Aboriginal objects can only be achieved if sites have been notified to OEH and registered within the

AHIMS system. Hence there is a procedural interrelationship between s85a and s91 of the NP&W Act and the earliest that each is addressed the more efficient and timely Aboriginal Cultural Heritage issues can be addressed for the life of each Project.

Issue 13: Long term protection of Aboriginal objects

Where Aboriginal objects are transferred to the care and control of the Aboriginal community there is an implied expectation in the NP &W Act that the Aboriginal community will act to secure and retain the long term – preferably in perpetuity - care of these Aboriginal objects. OEH is aware that for some Part 3A Projects, particularly those associated with the mining sector, agreements have been sought and/or reached between proponents and Aboriginal community stakeholders that require the re-instatement of Aboriginal objects back into the landscape from which they were removed / salvaged upon the cessation of the Project.

These are usually accompanied by agreements and/or commitments to record and re-register on the OEH AHIMS database Aboriginal artefacts/sites emplaced back into the landscape. Whilst these may appear to be suitable options proponents are cautioned that informed decision making and consultation with OEH is required so that all policy and legislative consequences of re-instatement are considered. Some of the relevant considerations include:

- Expected land tenure arrangements post Project and post re-instatement of Aboriginal objects. If land is to revert to freehold upon cessation of a Project, the ability of the Aboriginal community to maintain the long term access to and care of Aboriginal sites in these areas is potentially negated. It is most likely dependent on a third party not yet involved in any of the negotiated processes. This then has potential consequences for the effective achievement of intergenerational equity¹ by the proponent. It may therefore be preferable to negotiate for the re-instatement of Aboriginal objects into areas that will, as a result of current Project commitments, be assured some form of long-term conservation status.
- Life of Project considerations and 'temporary storage' arrangements for Aboriginal objects that are to be placed back into the landscape. Maintenance by proponents of on site storage of Aboriginal objects for the life of long-term projects is not consistent with notions of 'temporary storage' and/or the transfer functions of s85 of the NP&W Act.
- Any commitment by a proponent to the establishment of a 'keeping place' within the Project area must be considered in light of the transfer provisions of s85 of the NP&W Act so that local Aboriginal community groups are not restricted in their ability to care and control the Aboriginal objects transferred to them by the crown.
- Re-registration of Aboriginal sites on the OEHs AHIMS database. When requests are made to re-register Aboriginal artefacts/sites emplaced back into the landscape upon salvage, the implication is that OEH is required to afford ongoing protection of these salvaged objects. However it is clear that the context and the social and scientific significance of the objects have been altered by the processes of salvage. These changes must be fully considered, especially where land is to be returned to freehold status since these potentially place additional responsibilities on any third party that may in future seek to acquire the land, and on OEH in regard to future regulation of the Aboriginal cultural heritage values on the land.

E. OTHER ISSUES

Issue 14: Water deficit and estimated water for dust suppression

The water balance predicts that in dry years the peak water demand would exceed available resources for dust suppression and the CHPP. The proponent has identified some options for either reducing water requirements or accessing additional water off site. One option identified by the proponent is reduced coal washing to reduce demand for water. OEH is concerned over potential

dust impacts if there is no water available for dust suppression on haul roads / stockpiles in particular.

Recommendation:

The proponent should be required to acquire additional water through the market for use as a high security water supply in dry years.

Issue 15: Final Mine Void

OEH notes that the final void is to be minimised at the end of the project and where possible combined with other mine projects such as Maules Creek Mine. However, little justification is provided that demonstrates that it is uneconomical to provide a final rehabilitated landscape that negates the need for a final void.

Recommendation:

The Proponent should be required to fully investigate mining plans and final rehabilitation plans that ideally remove the need for a final void at the end of the mines life. This is worlds Best Practice for mining.

Issue 16: Linkages with other mines in the vicinity of Maules Creek Coal Project

As an overall comment OEH acknowledges the attempt to provide a conceptual integration of the Maules Creek mining proposal with the surrounding Tarrawonga and Boggabri mine proposals.

The Boggabri Coal stage 2 proposal which if incorporated may significantly affect conclusions in relation to bio-diversity, dust and noise impacts. In addition, there may be significant opportunities and benefits in integrating (conceptually) final landform design, water management and biodiversity offset strategies across mining operations.

There are also significant benefits provided with adjoining mines operate a joint / linked monitoring system to assist mine management and respond to off-site complaints

Recommendation:

The proponent be required the continue their work with adjoining mine operators / proposals to work toward minimising final landscape / biodiversity impacts and enhanced noise / air / water management and biodiversity outcomes.

ATTACHMENT 2 – SITE-SPECIFIC BEST MANAGEMENT PRACTICE (BMP) REPORT

Prior to construction, the Proponent must undertake a site-specific Best Management Practice (BMP) determination to identify the most technically and economically feasible measures to minimise particulate matter emissions from the Maules Creek Coal Mine.

Coal Mine Particulate Matter Control Best Practice Assessment and Report

- 1 The Proponent must conduct a site-specific Best Management Practice (BMP) assessment to identify the most practicable means to reduce on-site particle emissions.
- 2 The Proponent must prepare a *Coal Mine Particulate Matter Control Best Practice Assessment Report* (the Report) in consultation with the *Department of Planning and Infrastructure* and the *Office of Environment and Heritage* which includes, but is not necessarily limited to, the following:
 - identification, quantification and justification of best practice measures that could be used to minimise particle emissions during various stages of the Maules Creek Coal Mine Plan; and,
 - evaluation of the practicability of implementing these best practice measures.

In preparing the *Report*, the Proponent must utilise the document entitled *Coal Mine Particulate Matter Control – Guideline for Site-Specific Best Management Practice (BMP) determination*, included at Tab 2.

- 3 The *Report* must be submitted by the Proponent to the Department of Planning and Infrastructure at <<address>> by <<deadline>>.
- 4 The *Report* must be made publicly available by the Proponent on the Maules Creek Coal Mine website by <<deadline>>.

Coal Mine Particulate Matter Control – Guideline for Site-Specific Best Management Practice (BMP) determination

PURPOSE OF THIS GUIDELINE

The purpose of this guideline is to provide details of the process to be followed in conducting a site-specific determination of best practice measures to reduce emissions of particulate matter from coal mining activities. This guideline also provides the required content and format of the *Coal Mine Particulate Matter Control Best Practice – Assessment and Report* (the Report).

THE SITE-SPECIFIC DETERMINATION PROCESS

In preparing the Report, the following steps must be followed, as a minimum:

1. Identify, quantify and justify best practice measures that could be used to minimise particle emissions for each stage of the Mine Plan

- 1.1 Estimate baseline emissions of TSP, PM₁₀ and PM_{2.5} (tonne per year) from each mining activity. This estimate must:
 - utilise USEPA AP42 emission estimation techniques; and,
 - calculate uncontrolled emissions (with no particulate matter controls in place).

(Note: these particulate matter controls must be clearly identified, quantified and justified with supporting information).

- 1.2 Using the results of the uncontrolled emissions estimates generated from Step 1.1, rank the mining activities from highest to lowest according to the mass of TSP, PM₁₀ and PM_{2.5} expected to be emitted by each mining activity per year.
- 1.3 Identify the most significant mining activities (e.g. cumulative 95th percentile) from Step 1.2 that would contribute the highest emissions of TSP, PM₁₀ and PM_{2.5} for each year.
- 1.4 For each of the most significant mining activities identified in Step 1.3 (e.g. cumulative 95th percentile), identify the best practice measures that could be implemented to reduce emissions taking into consideration:
 - the findings of Katestone (2010), *NSW Coal Mining Benchmarking Study - International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining*, Katestone Environmental Pty Ltd, Terrace 5, 249 Coronation Drive, PO Box 2217, Milton 4064, Queensland, Australia.
<http://www.environment.nsw.gov.au/resources/air/KE1006953coalminebmpreport.pdf>;
 - any other relevant published information; and,
 - any relevant industry experience from either Australia or overseas.
- 1.5 For each of the significant mining activities identified in Step 1.3 (e.g. cumulative 95th percentile), estimate emissions of TSP, PM₁₀ and PM_{2.5} from each mining activity following the application of the best practice measures identified in Step 1.4.
- 1.6 This analysis must include each stage of the Mine Plan.

2. Evaluate the practicability of implementing these best practice measures

- 2.1 For each of the best practice measures identified in Step 1.4, assess the practicability associated with their implementation, by taking into consideration:
 - implementation costs;
 - regulatory requirements;
 - environmental impacts;
 - safety implications; and
 - compatibility with current processes (if applicable) and proposed future developments.
- 2.2 Identify those best practice measures that will be implemented at the premises to reduce particle emissions for each stage of the Mine Plan.

REPORT CONTENT

The report must clearly identify the methodologies utilised and all assumptions made.

The report must contain detailed information justifying and supporting all of the information used in each step of the process.

In evaluating practicability of best practice measures in Step 2, the Proponent must document the following specific information:

- *Estimated capital, labour, materials and other costs for each best practice measure on an annual basis for every year in each stage of the Mine Plan. This information must be set out in the format provided in Appendix A;*
- *Quantification of any new environmental impacts that may arise from the application of a particular best practice measure, such as increased noise or fresh water use;*
- *The details of safety impacts that may result from the application of a particular best practice measure; and,*
- *The details of any incompatibility with current operational practices at the premises (if applicable); and or details of any incompatibility with future development proposals at the premises.*

REPORT FORMAT

The report must be structured according to the process outlined above and submitted in both electronic format as .PDF format and hard copy format in triplicate. All emission estimates, costs and supporting calculations must be submitted in electronic format as .XLS format.

ABBREVIATIONS AND DEFINITIONS

USEPA AP42 Emission Estimation Techniques – all of the following:

- USEPA (1995), *AP 42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Technology Transfer Network - Clearinghouse for Inventories & Emissions Factors, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, USA. <http://www.epa.gov/ttn/chief/ap42/index.html> ;
- USEPA (1998), *AP 42, Chapter 11.9 Western Surface Coal Mining*, Technology Transfer Network - Clearinghouse for Inventories & Emissions Factors, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, USA. <http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s09.pdf> ;
- USEPA (2006), *AP 42, Chapter 13.2.2 Unpaved Roads*, Technology Transfer Network - Clearinghouse for Inventories & Emissions Factors, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, USA. <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0202.pdf> ;
- USEPA (2006), *AP 42, Chapter 13.2.4 Aggregate Handling and Storage Piles*, Technology Transfer Network - Clearinghouse for Inventories & Emissions Factors, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, USA. <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf> ; and
- USEPA (2006), *AP 42, Chapter 13.2.5 Industrial Wind Erosion*, Technology Transfer Network - Clearinghouse for Inventories & Emissions Factors, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, USA. <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0205.pdf> .

PM₁₀ – Particulate matter of 10 micrometres or less in diameter

PM_{2.5} – Particulate matter of 2.5 micrometres or less in diameter

Mining Activities – means:

- Wheel generated particulates on unpaved roads
- Wind erosion of overburden
- Blasting
- Bulldozing Coal
- Trucks unloading overburden
- Bulldozing overburden
- Front-end loaders on overburden
- Wind erosion of exposed areas
- Wind erosion of coal stockpiles
- Unloading from coal stockpiles
- Dragline
- Front-end loaders on overburden
- Trucks unloading coal
- Loading coal stockpiles
- Graders
- Drilling
- Coal crushing
- Material transfer of coal
- Scrapers on overburden
- Train loading
- Screening; or
- Material transfer of overburden

TSP - Total Suspended Particulate Matter

Appendix A: Presentation of Information on Cost of Implementation

The report should provide spreadsheets including estimates of the annual capital, labour and materials costs for each year over a ten year period for implementing each best practice measure identified in Step 2.

A template is given below for one best practice measure.

Mining Activity:	Example: Wheel-generated particulates on unpaved roads							
Best practice measure:	Example: Procurement of large trucks/vehicles							
Year	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Cost of specific capital items (e.g. new vehicle)*								
Total capital costs								
Labour costs including directly related on-costs								
Cost of specific materials and other items (e.g. fuel)*								
Total material and other costs								
Estimated additional cost per tonne of particulate matter suppressed for TSP, PM₁₀ and PM_{2.5}*								
Cost savings from implementing each best practice measure*								
Estimated net cost per tonne of particulate matter suppressed for TSP, PM₁₀ and PM_{2.5}*								

* each item must be specified – one item per row in spreadsheet.

ATTACHMENT 3 – REACTIVE PARTICULATE MANAGEMENT STRATEGY

Strategy for real-time management of site-specific particulate emissions

- 1 The Proponent must develop (prior to construction), and implement a *Reactive Particulate Management Strategy* (the *Strategy*) for the Maules Creek Mine site, which is to be prepared in consultation with the *Department of Planning and Infrastructure* and the *Office of Environment and Heritage*.
- 2 The *Strategy* is to be developed for the purpose of real-time management of short-term ambient particulate concentrations resulting from the Maules Creek Mine operations, at residences in the Maules Creek community. To enable the effective reactive management of particulate emissions from facility-wide operations, the *Strategy* should incorporate the following elements:
 - 2.1 As outlined in condition 3.1, nominate and establish ambient particulate monitoring sites for management and compliance purposes.
 - 2.2 As outlined in condition 3.2, use weather data (e.g. wind speed and direction) from an on-site meteorological station to assist in selecting and implementing the most technically and economically feasible particulate mitigation strategies (as identified by the BMP determination).
 - 2.3 As outlined in condition 3.3, identify specific mitigation measures for the effective reactive management of significant particulate-generating activities at the Project site in response to inputs such as wind speed and direction and trigger particulate concentration levels, including, but not limited to, cessation of activities under adverse conditions.
- 3 The *Strategy* must aim to monitor local meteorology and particulate impacts of the mining operations within/at the Project boundary and at receiver locations, by incorporating the following as a minimum:

3.1 Real-time ambient monitoring of particulates

3.1.1 Establish reliable ambient particulate monitoring program as follows:

- Nominate and establish a network of real-time particulate monitoring sites within and beyond the Project boundary for the purpose of gauging project activity emissions on short time-scales (i.e., less than 1-hour). These monitoring sites shall be referred to as "management monitoring" sites and monitoring data used for informing day-to-day reactive management measures. The management monitors should be fit-for-purpose but need not comply with AM-22.
- Nominate and establish a suitable number of ambient PM₁₀ monitoring sites at relevant locations for the purpose of determining compliance with the OEH 24-hr average concentration criterion (50 µg/m³). These shall be referred to as "compliance-monitoring sites". The compliance-monitoring program must be maintained so as to be capable of continuously monitoring the parameters specified in the following table.

Parameter	Units of measure	Frequency	Averaging Period	Sampling Method
PM ₁₀	µg/m ³	Continuous	24-hour	AM-22
Additional requirements				
- Siting				AM-1 & AM-4
- Measurement				AM-2 & AM-4

3.1.2 Establish trigger levels for reactive management of on-site emissions

The particulate monitoring program should be designed to:

- Identify short-term (i.e., less than 1-hour) particulate concentration trigger level(s) at “management monitoring sites” consistent with achieving 24-hr averages of 50 µg/m³ at “compliance-monitoring” site(s).
- Alert the mine manager when particulate levels exceed the nominated trigger level(s).

3.2 Real-time meteorological monitoring

3.2.1 Establish a reliable meteorological monitoring station

A real-time meteorological weather station must be established and maintained on-site so as to be capable of continuously monitoring the parameters specified in the following table.

Parameter	Units of measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1 hour	AM-4
Wind speed @ 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4
Wind direction @ 10 metres	°	Continuous	15 minute	AM-2 & AM-4
Temperature @ 2 metres	°C	Continuous	15 minute	AM-4
Temperature @ 10 metres	°C	Continuous	15 minute	AM-4
Sigma theta @ 10 metres	°	Continuous	15 minute	AM-2 & AM-4
Solar radiation	W/m ²	Continuous	15 minute	AM-4
Additional requirements				
- Siting				AM-1 & AM-4
- Measurement				AM-2 & AM-4

3.2.2 Establish trigger levels for reactive management of on-site emissions

- Identify meteorological parameters, such as wind speed categories and wind direction (at specified averaging periods) that would form the trigger(s) for the operational management of specific particulate-generating mining activities.
- Alert the mine manager when the nominated trigger(s) are tipped.

3.3 Identify management strategies

Options to be adopted in response to meteorological and ambient particulate concentration triggers, for the reactive management of specific particulate-generating activities should be outlined, including the following as a minimum:

- All specific activities that are particulate-generating must be identified.
- Avoid high particulate-generating activities during adverse wind conditions, such as when winds are blowing directly towards the nearest sensitive receptors.
- Cease or reduce excavator and dozer operations when prevailing winds are in the direction of sensitive receptors.
- The mine manager must be provided with weather updates consistent with alerting to sudden onset of strong winds to enable timely application of water sprays necessary to reduce the potential for wind erosion.

- 4 The *Strategy* must incorporate reporting provisions for the local community. A *Complaints Register* for the Project must be established and any complaints regarding the mining operations must be recorded. All complaints must be correlated with prevailing weather

conditions and operational activities undertaken at the time of reporting. The *Complaints Register* must be available to the OEH and external auditors upon request.

- 5 Annual reviews of the effectiveness of the *Strategy* must be undertaken upon implementation (i.e. every 12 months). In accordance with the findings of the annual review, management practices implemented for controlling emissions from significant particulate-generating activities must be revised and the *Strategy* documentation updated. The outcome of the annual review must be included in the Maules Creek Mine's Annual Environmental Management Report (AEMR), and details made available to the OEH.
- 6 The monitoring and air quality management program established through this *Strategy* should be incorporated into the *Regional Air Quality Management Plan* (Tab 4).
- 7 The *Reactive Particulate Management Strategy* must be documented and submitted by the Proponent to the *Department of Planning and Infrastructure* at <<address>> by <<deadline>>.
- 8 The *Reactive Particulate Management Strategy* must be made publicly available by the Proponent on the Maules Creek Coal Mine website by <<deadline>>.

ATTACHMENT 4 – REGIONAL AIR QUALITY MANAGEMENT PLAN

Regional Air Quality Management Plan – Development and Report

- 1 Prior to construction, the Proponent must develop a *Regional Air Quality Management Plan* (the Plan) in cooperation with neighbouring mines (Boggabri and Tarrawonga), members of the local community, the *Department of Planning and Infrastructure* and the *Office of Environment and Heritage*.
- 2 The Plan must be developed with the objective of real-time management of cumulative impacts of all mining operations in the Gunnedah Coal Basin region, consistent with achieving 24-hr average PM₁₀ concentration of 50 µg/m³ at receivers located within the Maules Creek community and also the regional community impacted by other mines.
- 3 The Plan should enable the co-operative development, implementation and maintenance of a holistic regional network capable of providing:
 - real-time ambient air quality monitoring; and,
 - real-time meteorological monitoring.
- 4 The Plan should incorporate predictive air quality modelling capability for the reactive management of particulate emissions from various mining activities in the region.
- 5 The Plan must also incorporate all site-specific measures identified through the BMP determination (Tab 2) and the *Reactive Particulate Management Strategy* (Tab 3), and identify specific monitoring locations for particulate management and compliance-monitoring purposes.
- 6 The Proponent must document the *Regional Air Quality Management Plan* in consultation with the *Department of Planning and Infrastructure* and the *Office of Environment and Heritage*. This should include, but not be limited to:
 - an evaluation of the practicability of implementing the *Regional Air Quality Management Plan*; and,
 - the strategy for long-term management or maintenance of the holistic regional network.
- 7 The *Regional Air Quality Management Plan* must be submitted by the Proponent to the *Department of Planning and Infrastructure* at <<address>> by <<deadline>>.
- 8 The *Regional Air Quality Management Plan* must be made publicly available by the Proponent on the Maules Creek Mine's website by <<deadline>>.