DOC19/604112-31; EF13/4404

Department of Planning, Infrastructure and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Ms Genevieve Seed

By email: Genevieve.seed@planning.nsw.gov.au

28 August 2019

Dear Ms Seed

Mangoola Coal Continued Operations Project (SSD 8642)
Recommended Conditions of Consent

I refer to your email to the Environment Protection Authority (EPA) received 15 July 2019, seeking recommended conditions of consent in relation to the Mangoola Coal Continued Operations Project (SSD-8642), located in the Muswellbrook area of New South Wales, in the Muswellbrook City Council local government area.

The Mangoola Coal Mine is an open cut mine approximately 20 kilometres west of Muswellbrook which has operated since 2010. Mangoola Coal Operations Pty Limited (Mangoola) is proposing to expand the mine to the north of the existing operations and extend the mine's life. The project comprises:

- continued open cut mining up to the current 13.5 million tonnes per annum;
- construction of a haul road overpass over Big Flat Creek and Wybong Road connecting the existing and proposed mining areas and realignment of a portion of Wybong Post Office Road
- changes to overburden management;
- establishment of a water management system to manage sediment laden water runoff, divert runoff from undisturbed areas, provide flood protection from Big Flat Creek and provide reticulation of mine affected water;
- use of the approved (but not yet constructed) water discharge facility to discharge excess water in accordance with the Hunter River Salinity Trading Scheme; and
- establishment of a final landform and rehabilitation.

The EPA has reviewed the *Mangoola Coal Continued Operations Project Environmental Impact Assessment* prepared by Umwelt (Australia) Pty Limited dated July 2019 (the EIS) and has determined that it has requires additional information to allow the EPA to properly assess the application.

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The following information is required before the EPA can recommend conditions:

Water Quality:

Further information relating to the Surface Water Assessment (SWA) is required to determine the impacts to the receiving environment as a result of the Project. The EPA requires the SWA to be revised to include the following additional information:

- **Assessment of the potential impacts of discharges on the environmental values of the receiving waterways** – The SWA proposes a water management system that would include discharges to the Hunter River, Big Flat Creek, Anvil Creek and Sandy Creek. The SWA needs to be revised to include a quantitative assessment on the effect of discharges on pollutant concentrations in the receiving waterways and the potential impact on their environmental values. The SWA also needs to be revised to consider the full range of pollutants potentially present at non-trivial levels and provide an assessment with reference to the relevant *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline values.

- **Derivation of site-specific guideline values used in the discharge impact assessment** – Whilst the SWA compares monitoring data from local waterways to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline values, the SWA needs to be revised to provide sufficient justification or detail for the derivation of site-specific trigger values in Tables 8 and 9.

Further details of the information required is provided in **Attachment A**.

Noise impacts:

The Noise Impact Assessment (NIA) predicts impacts to surrounding receivers as a result of the Project. Prior to recommending conditions of approval the EPA requires the following additional information to inform its assessment:

- **Confirmation that predicted noise levels align with noise enhancing meteorological conditions** – The noise predictions made in the NIA are based on a cumulative distribution approach. The Applicant is required to confirm that the predicted noise levels using the 10^{th} percentile approach align with noise enhancing meteorological conditions in the Noise Policy for Industry (NPfI).

- **Further analysis of all feasible and reasonable mitigation measures –** the NIA must be revised to include a comprehensive analysis of all feasible and reasonable mitigation measures identified for “marginally” and “negligibly” impacted receivers in accordance with the NPI.

- **Assessment of construction noise impacts out of standard hours** – The NIA proposes to apply the existing operational noise limits for activities undertaken outside of standard construction hours. The NIA must demonstrate that the prerequisite circumstances outlined in the Section 2.3 of the Interim Construction Noise Guideline (ICNG) are met and that construction activities can be managed to satisfy the ICNG out of standard construction hours noise management levels.

Further detail of the information required is provided in **Attachment B**.

Air Quality Impacts

The Air Quality Impact Assessment (AQIA) demonstrates that minimal impacts to the surrounding receivers are likely to occur as a result of the Project. However, the EPA requires clarification of the following points prior to recommending conditions of approval:

- **Justification of background levels** – Section 5.4 of the AQIA notes that background data for PM_{10} and $PM_{2.5}$ assumes that the “minimum values from these sites reflected a location that

was not being influenced by emissions from the sources/operation to be modelled". The Applicant must provide justification for the chosen methodology and detail whether the contemporaneous dataset considered wind direction in determining the upwind monitor.

- **Calculation and assumption of peak daily emissions** – it is unclear in the AQIA whether peak daily emissions were modelled for each scenario. The Applicant must confirm if peak daily emissions were modelling and provide details and calculations for the throughput assumed for each scenario.

- **Justification of emissions management measures including watering of haul roads** – the AQIA has assumed an 85% emission control for hauling overburden and coal on unsealed roads including watering of haul roads, compaction, restricting vehicle speeds and fleet optimisation (see Table 20). The National Pollution Inventory notes that at 75% emission control is Level 2 watering, equivalent to greater than 2 $L/m^2/h$. It is unclear whether the dispersion model assumes watering of haul routes for all hours and if the Applicant proposes to undertake this level of watering during operations. The AQIA should be revised so that controls are only applied when watering is proposed to be undertaken.

- **Additional detail of proposed watering of stockpiles and unloading operations –** the AQIA has assumed emission control factors for water sprays during unloading coal to ROM hopper and to minimise wind erosion from ROM and product coal stockpiles. The Applicant needs to provide detail on whether this will occur continuously during operations or if it will be triggered by particular meteorological conditions.

- **Additional detail of proposed enclosure of conveyors to stockpiles, coal processing and coal unloading to ROM hopper** – Table 20 of the AQIA notes that coal processing and conveyors to stockpiles will be enclosed. It also notes that unloading coal to the ROM hopper with be partially enclosed. It is unclear at what stage of the operation this will occur, or if it forms part of the existing operation, and to what degree these activities will be enclosed, and how. The Applicant must provide additional details including maps of the static control measures.

- **Additional detail on meteorological triggers to be implemented in the Trigger Action Response Plan** - Section 10 of the AQIA notes that the Applicant will "implement a range of dust management measures for the key dust generating activities" and that "reactive air quality management will assess the need to modify the activities in response to the following triggers…meteorological conditions, such as dry, strong winds". The Applicant must provide additional details on what meteorological triggers, such as wind speed, direction, temperature etc, will be used in the reactive air quality management system and how this will feed into the Trigger Action Response Plan (TARP). The Applicant has not provided detail on when the TARP process will be enacted and what management responses will be used to manage dust during operations.

The EPA is unable to recommend conditions of approval until all of the above issues have been addressed and further information has been supplied.

If you have any questions about this matter, please contact Genevieve Lorang on (02) 4908 6869 or by email to hunter.region@epa.nsw.gov.au

Yours sincerely

MITCHELL BENNETT
Head Strategic Operations Unit - Hunter
Environment Protection Authority

Encl: Attachment A- further information required - Surface Water Quality
Attachment B- further information required - Noise

ATTACHMENT A – FURTHER INFORMATION REQUIRED - SURFACE WATER QUALITY

The SWA needs to adequately assess the potential impact of discharges on the environmental values of the receiving waterways

The SWA proposes a water management system that would include controlled discharges from the Pit Water Dam to the Hunter River and managed overflows from sediment retention basins to Big Flat Creek, Anvil Creek and Sandy Creek. The SWA does not include a quantitative assessment of the effect of discharges from the Pit Water Dam on pollutant concentrations in the receiving waterway and the potential impact on the environmental values. The SWA indicates that the Pit Water Dam would contain elevated pH and electrical conductivity and concentrations of aluminium and zinc would be slightly elevated.

The SWA estimates the electrical conductivity of discharges and the loads of salts expected to be discharged, comparing these to the total background loads. However, the SWA does not consider the full range of pollutants potentially present at non-trivial levels.

An assessment of the effect of discharges on the water quality in the receiving waterways with reference to the relevant *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline values is required to determine whether the proposed discharges would maintain or restore the environmental values. The SWA does not provide this.

The applicant should revise the discharge impact assessment to include:

- *a characterisation of the controlled discharges to waters in terms of the concentrations and loads of all pollutants expected to be present at non-trivial levels*
- *comparison of the expected pollutant concentrations in the immediate receiving waterway during discharges to the relevant* Australian and New Zealand Guidelines for Fresh and Marine Water Quality *guideline values under typical and worst-case conditions*
- *where relevant, identification of practical measures to address identified impacts.*

Any site-specific guideline values used in the discharge impact assessment should be derived consistent with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*

Tables 8 and 9 of the SWA compare monitoring data from local waterways to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline values and in some cases 'site-specific trigger values'. It is unclear how these 'site specific trigger values' were derived.

The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* states that in some cases, default guideline values can be appropriately modified to account for naturally elevated background concentrations (natural toxicant concentrations unrelated to human disturbance). The guidelines recommend that site-specific guideline values should be based on at least 2 years of monthly monitoring data from an appropriate site, representative of water bodies unimpacted by human disturbance. For toxicants, the guideline states:

The extent to which the ecosystem can accommodate further elevation of toxicant concentrations should be considered where there is evidence that the local ecosystem may be naturally stressed, has reduced biodiversity or has altered structure compared with ecosystems without naturally elevated concentrations.

If the aquatic ecosystem has a limited ability to tolerate substantial further increases in concentration, then it might be necessary to set the reference-based guideline value at a value below the 80th percentile of the reference data (closer to the median value), and to implement biological monitoring as a condition of using the guideline value in a weight-of-evidence process.

If site specific guideline values are used to assess the impact of discharges, the applicant should demonstrate these have been derived consistent with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.*

ATTACHMENT B – FURTHER INFORMATION REQUIRED - NOISE

Confirmation that the levels derived using the 10th percentile approach would align with the noise enhancing meteorological conditions in the NPI.

The NIA has assessed noise for four operational scenarios identified as Years 1, 3, 5 and 8. The noise predictions are based on a modelling process that considers 260 individual meteorological conditions and is commonly referred to as a cumulative distribution approach. The ultimate predicted level is then established based on the upper 10th percentile of predicted levels.

The Applicant should confirm that the predicted level would align with the noise enhancing meteorological conditions in the NPI.

Further analysis of all feasible and reasonable mitigation measures in accordance with the NPI for all "marginally" and "negligibly" impacted receivers.

Nineteen receivers are identified as "marginally" impacted and 31 receivers are identified as "negligibly" impacted. The NPI requires that the starting point should be identifying mitigation measures that would achieve the Project Noise Trigger Levels and then determining those measures that are both feasible and reasonable. The later part of this process has not occurred in the NIA. Prior to the EPA considering licensing to these locations (or representative locations) should the planning approval afford mitigation rights to these locations; the NIA must be revised to include further analysis of all feasible and reasonable mitigation measures in accordance with the NPI.

The Applicant should provides a further analysis of all feasible and reasonable mitigation measures in accordance with the NPI for all locations identified as "marginally" or "negligibly" impacted.

Assessment of out of standard hours construction impacts

The NIA has adopted daytime construction noise criteria consistent with the Interim Construction Noise Guideline (ICNG) i.e. LAeq,15minutes 45dB(A). However, the NIA proposes to apply the existing operational noise limits in PA 06_0014 for out of standard hours construction activities. The EPA will accept assessment of daytime impacts against the ICNG, however out of standard hours construction should not occur unless the prerequisite circumstances outlined in Section 2.3 of the ICNG are met and the construction activities can be managed to satisfy the ICNG out of standard construction hours noise management levels.

The Applicant must demonstrate that the prerequisite circumstances outlined in Section 2.3 of the ICNG can be met and that the construction activities can be managed to satisfy the ICNG out of standard construction hours noise management levels.