

OUT17/24174

Ms Melanie Hollis
Resource Assessments
NSW Department of Planning and Environment
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Dear Ms Hollis

**Wambo Coal Mine South Bates Extension (DA 305-7-2003 MOD 17)
Comment on the Environmental Assessment (EA)**

I refer to your email of 28 March 2017 to the Department of Primary Industries (DPI) in respect to the above matter, and I apologise for the delay in responding to you.

Comment has been sought from relevant divisions of DPI. Views were also sought from NSW Department of Industry - Lands that are now a division of the broader Department and no longer within NSW DPI.

Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the EA and provides the following comments with additional detailed information at **Attachment A**:

- DPI notes that given the complexity of the underground mining environment in this area there are likely to be significant uncertainties in predictions of long term impacts in some parts of this proposal.
- DPI considers that there is insufficient detailed baseline data and information to support the proponent's conclusions of minimal impact to Groundwater Dependant Ecosystems, water users and surface water systems. The project as it stands represents a significant risk to the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - endangered ecological community.
- DPI recommends that, with the level of uncertainty associated with the current information, the most reliable way to mitigate these risks would be to remove longwall panels 24 and 25 from this proposal, and shorten longwall panel 23 to prevent mining directly beneath North Wambo Creek.
- DPI recommends that the proponent expand the monitoring in consultation with DPI Water (water.referrals@dpi.nsw.gov.au) in order to facilitate reporting on water quality, quantity and the extent of vertical aquifer depressurisation.
- The proponent should update the water management plan in consultation with DPI Water to include additional details impacts and monitoring, make good provisions and a trigger action response plan.

- Further mitigation measures for impacts to water resources should be developed in consultation with DPI Water.
- The proponent should provide an independent review for the groundwater model as required under the [Aquifer Interference Policy \(2012\)](#).
- Representatives of DPI Water will be available for a meeting with the proponent to discuss the existing issues and recommendations.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'M. Isaacs', with a stylized, cursive script.

Mitchell Isaacs

Director, Planning Policy & Assessment Advice

29 June 2017

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:

<https://goo.gl/o8TXWz>

Attachment A

Wambo Coal Mine South Bates Extension (DA 305-7-2003 MOD 17) Request for Input into Secretary's Environment Assessment Requirements Detailed comments

DPI considers that the following recommended actions and additional information should be required as necessary for approval of the modification.

Impacts to Groundwater Dependent Ecosystems

- The interpretation of the modelling reports by the proponent is that the impact of the proposed modification will be incremental above what is already approved. DPI considers the predicted impacts to GDEs to be greater than that already approved rather than incremental in nature, specifically in relation to the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - endangered ecological community (EEC), which has not been predicted to be impacted by already approved mining operations. The predicted drawdown for this EEC is greater than 10 m which is likely to be a significant impact.
- Removing longwall panels 24 and 25 and shortening panel 23 would substantially reduce the risk of groundwater drawdown and subsequent impacts to North Wambo Creek and the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - endangered ecological community (EEC) .
- It is also recommended that a specific Trigger Action Response Plan (TARP) be implemented regarding this EEC.

Water Monitoring Network

- It is recommended that several clustered bore sites and/or vibrating wire piezometers are established within the Porous Rock above the proposed modification 17 area. These must be established as early as possible. The selected sites should be both within and beyond the predicted area of connective fracture to surface and one within a close proximity to the mapped EEC. This is important to facilitate reporting on pre-mining piezometric levels and water quality for all four coal seam aquifers, shallow interburden and if present the alluvial aquifer in proximity to the River Red Gum EEC.
- In addition further monitoring sites are required above long wall panels 11-16 (South Bates Underground) to increase the understanding of vertical extent of aquifer depressurisation in a multi-seam environment. This monitoring must include sites both within and beyond the predicted area of connective fracture to surface.
- Further information is required regarding the Riparian EEC (River Redgum regarding the presence and extent of shallow/colluvial groundwater system which this EEC may be dependent on for ensuring its health and continuity. To assist in this it is recommended that two clustered monitoring bore sites in both the upper and lower extent are established at this location
- The proponent should consult with landholders where bores are predicted to have a Level 2 cumulative impact greater than the 2 m with the aim of negotiating access agreements for monitoring of these bores and put in place 'make good' provisions as required.

Modelling and data

- The proponent should provide an independent review for the groundwater model as required under the [Aquifer Interference Policy \(2012\)](#).

- Further information is required regarding the numerical groundwater model and its calibration inclusive of site locations, hydrographs for all bores showing measured and predicted statistical outputs for the calibration. It is also requested that information, where appropriate, be provided electronically and be compatible with Microsoft Excel (csv format). This must be accompanied by the bore construction logs.
- Similarly in relation to section 3.8 of the Hydrosimulations report regarding model calibration it is noted that P114 is located outside the revised extent of alluvium as per the TEM survey by Groundwater Imaging (2012). DPI Water has not yet determined the accuracy of this revision of the alluvial extent and as per the comments made during the Response to Submissions stage of modification 12 it is recommended that further drilling occurs with all lithology logs to be submitted to DPI Water for review. This is important to increase understanding of the target aquifers being monitored and increase confidence in the model outputs.
- It is recommended that a sensitivity analysis be undertaken to consider the cumulative impact in a multi-seam environment across the area of Modification 17 for the extent of the hydrogeological connection to surface. This is also important to assess depth in the market should impact to the Lower Wollombi Brook Water Source be greater than is predicted.
- A supplementary report is required regarding the rationale for the predicted lower re-equilibrated groundwater levels within the Modification 17 area. DPI requires further locational understanding of where changes in flux and discharge takes place within the model to balance predicted lower pressure heads from that of pre mining.

Licensing

- The assessment regarding the extent of subsidence hydrological connection to surface and the subsequent impacts was undertaken referencing Hebblewhite (2010). However the calculations did not include a representative caved zone of 30-50 m. Further information is required regarding whether there was an error in the application of this method or the rationale for excluding a representative caved zone. Subject to further information on this issue DPI may require revised estimates be provided. This is important to ensure sufficient information is available to assess whether predicted impacts of reduced flow in North Wambo Creek may be licensed appropriately and to facilitate DPI in providing further advice on geomorphic and hydraulic impacts on the stream proposed to be undermined across all the panels.
- Table 2 in the groundwater assessment undertaken includes a list of groundwater licences held by the proponent and seeks confirmation of conversion status for some licences. DPI Water can confirm that the entitlement noted of 1647 ML is accurate and is deemed to be held as part of the WSP for the North Coast Fractured and Porous Rock Groundwater Sources 2016 however the physical conversion has not yet occurred due to ensuring exemptions under section 89J of the EP&A Act 1979 are appropriately reflected in the conversion process.

Additional Information and Figures

- The proponent should provide:
 - a figure showing the mapped alluvial extent, as used for the purposes of the groundwater model;
 - high resolution photographs of all mapped watercourses within the area of the modification from both an up and downstream perspective. These photographs should be oriented (location and direction) on a sketch plan, the high bank clearly identified and the GPS location of the photo points provided; and

- further information regarding the number of shares required from the Lower Wollombi Brook Water Source from the proposed development. This detail should include assessment of net losses generated from connective fracture, reduction of baseflow and increased ponding.
- Longwall panels 17-19 undermine the location of the approved, but not yet constructed, Montrose Dam. The proponent should provide detailed information regarding impacts from predicted subsidence and connective fracture on this storage.

Water Management Plan

- The proponent should update the Water Management Plan for the Site in consultation with DPI Water (water.referrals@dpi.nsw.gov.au). To assist the proponent in preparing for this consultation the Plan include consideration of the following matters:
 - establishment of a flow gauge upstream of North Wambo Creek;
 - contingency water supply arrangements and Trigger Action Response Plans for private bores predicted to have a cumulative impact greater than the 2 m minimal impact consideration and therefore will be subject to make good provisions;
 - appropriate management of works and mitigation of impacts to water resources in accordance with the DPI Water [*Guidelines for Controlled Activities on Waterfront Land \(2012\)*](#); and
 - proposed survey and photographic monitoring points for all watercourses within the modification area (baseline survey and photographic data must be obtained prior to commencement of mining, in conjunction with mid-panel surveys).

End Attachment A