NSW GOVERNMENT | Office of Environment & Heritage

DOC17/291337-2
SSD 5144 MOD 5

Ms Lauren Evans
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Department of Planning and Environment
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Dear Ms Evans

**Mandalong Southern Extension Project - Modification 5 (SSD 5144 MOD 5)**

I refer to your e-mail dated 25 May 2017 seeking advice from the Office of Environment and Heritage (OEH) on the proposed modification to the consent for the Mandalong Southern Extension Project.

OEH understands that the proposed modification involves the extension of Longwall Panel 24, and the creation of a new longwall panel (LW 24A) to enable the extraction of an additional 3.71 million tonnes of coal from the new and extended panels. If approved longwall mining would lead to vertical mine subsidence of up to 0.96 metres over an additional area of 172.04 hectares. The project does not require any new vegetation clearing.

OEH reviewed the Statement of Environmental Effects (SEE) prepared for this project in relation to flooding, threatened biodiversity and Aboriginal cultural heritage. OEH has no major concerns with this SEE, but did identify some procedural matters in relation to Aboriginal cultural heritage and have suggested a precautionary approach should subsidence impact on threatened biodiversity. Further details, with recommended conditions of consent are provided in **Attachment A**.

If you require any further information regarding this matter please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154.

Yours sincerely

9 JUN 2017

**RICHARD BATH**
**Senior Team Leader Planning, Hunter Central Coast**
**Regional Operations**

Enclosure: Attachment A

## ATTACHMENT A: OEH REVIEW OF THE STATEMENT OF ENVIRONMENTAL EFFECTS - PROPOSED MODIFICATION 5 OF THE MANDALONG SOUTHERN EXTENSION PROJECT (SSD 5144 MOD 5)

OEH reviewed the report titled: *Statement of Environmental Effects: Mandalong Mine: State Significant Development 5144 – Modification 5* (SEE), dated May 2017, and prepared by GHD Pty Ltd (2017) for Centennial Coal Company Limited. The SEE was reviewed in relation to flooding, threatened biodiversity and Aboriginal cultural heritage. The review identified only a few minor matters. Comments and recommended conditions of consent are presented below:

### ABORIGINAL CULTURAL HERITAGE ASSESSMENT

OEH has reviewed RPS (2016). *Mandalong Mine – Heritage Impact Assessment Longwall 24 & 24A Modification* provided in Appendix 8 of the SEE.

Based on the predicted subsidence levels, no mining related impacts are predicted to affect the identified Aboriginal site as a result of the extraction of Longwalls 24 and 24A. RPS (2016) note that there will be no change in the level of impact from the original Development Consent (SSD 5144) as a result of the extended longwalls.

It is acknowledged that the proponent will manage the identified Aboriginal sites in accordance with the provisions of the Centennial Coal *Northern Region Aboriginal Cultural Heritage Management Plan* (ACHMP). This document will be updated to include the location and significance of all sites identified within the Modification area.

OEH therefore has no concerns with respect to Aboriginal cultural heritage management for this modification. OEH recommends that the following conditions be included in any consent granted for this project:

Recommended Conditions of Consent for Aboriginal cultural heritage:

1. The significance of AHIMS site number 45-3-3678 must be assessed in consultation with the registered Aboriginal parties prior to the commencement of any ground disturbance or development works subject to this development.
2. Management recommendations for AHIMS site number 45-3-3678 must be developed in consultation with the registered Aboriginal parties prior to the commencement of any ground disturbance or development works subject to this development.
3. The proponent must update the existing Northern Region Aboriginal Cultural Heritage Management Plan to include the location, significance and any additional Aboriginal cultural heritage management constraints identified within the modification area prior to the commencement of any ground disturbance or development works subject to this development.
4. The Aboriginal cultural heritage management for the proposed modification area must be undertaken in accordance with the management recommendations detailed in the updated Northern Region Aboriginal Cultural Heritage Management Plan.

### FLOODING AND FLOODPLAIN MANAGEMENT

The flood assessment prepared by Umwelt (2017) has been briefly reviewed by OEH. The predicted impacts on habitable dwellings are generally small and result in no appreciable increase in flood risk. There are some instances where the existing freeboard above the 1% Annual Exceedance Probability (AEP) is close to the 0.5m standard, which is generally considered acceptable for residential buildings.

In at least one instance (Building 219), the freeboard is predicted to decrease from 0.6 m to 0.42 m, which might be reduced further to 0.24 m under the scenario of larger than predicted subsidence. This

represents a small reduction in flood immunity in events rarer than the 1% AEP. It may also have implications for the cost of insurance for the property owner if the Flood Planning Area was mapped by the Lake Macquarie City Council.

## THREATENED SPECIES

The *Biodiversity Assessment Report: Mandalong Longwalls 24-24A Modification* prepared by RPS Australia East Pty Ltd, dated 27 April 2017 was presented as Appendix 7 of the SEE. The proposed development involves an expansion to existing underground mining operations, and does not require any new surface clearing. Coal extraction for the additional longwall panels is predicted to cause up to 96 cm of vertical subsidence, which will affect surface water flows and may lead to new areas of ponding; including an area of up to 0.38 hectares (ha) of vegetation that meets the definition of four endangered ecological communities. No surface cracks are expected to form.

Biodiversity values were calculated for a Study Area of about 280 ha for this project that includes all land within the 26.5° angle of draw from the new longwall panels. The assessment was made in accordance with the *NSW Biodiversity Offsets Policy for Major Projects* (OEH, 2014a) using the *Framework for Biodiversity Assessment* (FBA) (OEH, 2014b). The assessment was run based on the loss of about 5 ha of native vegetation, and some individuals of two threatened plants found in the Study Area: Biconvex Paperbark (*Melaleuca biconvexa*) and *Maundia triglochinoides*. The assessment generated a credit yield that represents a worst-case scenario. Therefore, the Biodiversity Assessment (p. 34) concluded that since the project involved no new clearing and was considered to only have 'negligible' subsidence impacts that no offset strategy was required. Thus the proponent recommended that the current Biodiversity Management Plan was sufficient for this mine project.

As a minor point, OEH notes that the 'Impact Area' (outlined in red in Figure 1 to 5 inclusive) considered in this assessment does not appear to include the proposed extension of longwall panel 24. Ecological and ponding data is provided for that extension area, and given it is within the Study Area it has been included in the FBA assessment.

Subsidence from this project, if approved, is predicted to be minor due to the thickness and strength of the Mandalong Conglomerate that occurs above the targeted coal seams. This conglomerate spans the mine void and deforms to take most of the strain caused by mining operations. This has meant that widths of longwall panels for the mine could be increased, to maximise coal extraction, while ensuring that subsidence of the surface have been reduced. The Mandalong Conglomerate also occurs above the two new proposed longwall extraction panels and because of this only minor subsidence impacts are predicted (Seedsman Geotechnics Pty Ltd, 2017). This may be so, however, if the new longwall panels intersect unknown or poorly known vertical, or sub-vertical joint zones, dykes or faults then these may effectively transfer the mine void to the surface and lead to unexpected mine subsidence events. Such geological structures are often difficult to detect, and so far those encountered in the Mandalong Mine to date have only been small in scale (Seedsman Geotechnics Pty Ltd, 2017). Unlike other similar current projects, such as Austar MOD 7, the SEE for Mandalong MOD 5 does not include any maps of known or inferred cross-cutting structures in the area (such as those intersected by first workings in adjacent parts of the mine). Thus it is not possible for the reader of the SEE to understand the likelihood of such structures being intersected by the proposed new longwall panels. If such structures were intersected it could lead to unexpected subsidence events, and such subsidence events may lead to damage to threatened biodiversity, which could require offsetting. Therefore, as a precautionary approach, OEH recommends the following condition is included in any consent issued for this project:

Recommended Condition of Consent for Threatened Species:

1. That any harm to threatened biodiversity caused by the mining of the new longwall panel areas is assessed, and, if required, is offset in accordance with the *NSW Biodiversity Offsets Policy for Major Projects* (OEH, 2014a).

**References**

GHD Pty Ltd (2017) *Mandalong Mine: State Significant Development 5144 – Modification 5. Statement of Environmental Effects. Prepared on behalf of Centennial Mandalong Pty Limited. May 2017*. GHD Pty Ltd, Newcastle. http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8447

OEH (2014a) *NSW Biodiversity Offsets Policy for Major Projects. September 2016*. NSW Office of Environment and Heritage, Sydney. www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf

OEH (2014b) *Framework for Biodiversity Assessment. September 2016*. NSW Office of Environment and Heritage, Sydney. www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf

RPS Australia (East Pty Ltd (2016) *Mandalong Mine Heritage Impact Assessment: Longwall 24 & 24A Modification. November 2016*. RPS Australia East Pty Ltd, Broadmeadow. Presented as Appendix 8 of the Statement of Environmental Effects.

RPS Australia (East Pty Ltd (2017) *Biodiversity Assessment Report: Mandalong Longwalls 24-24A Modification prepared for Centennial Mandalong. 27 April 2017*. RPS Australia East Pty Ltd, Broadmeadow. Presented as Appendix 7 of the Statement of Environmental Effects.

Seedsman Geotechnics Pty Ltd (2017) *Centennial Mandalong Pty Ltd: Prediction of Subsidence Impacts for LW 24 and LW24A. March 2017*. Seedsman Geotechnics Pty Ltd. Presented as Appendix 5 in the Statement of Environmental Effects.

Umwelt (Australia) Pty Limited 2017. *Centennial Mandalong Flood Assessment: Longwalls 24 to 24a. April 2017*. Umwelt (Australia) Pty Limited, Teralba. Presented as Appendix A 'Flooding Assessment' in Appendix 6 Statement of Environmental Effects.

**OEH – JUNE 2017**