

## ASSESSMENT REPORT

# Austar Coal Project Longwalls A7-A10 Extension Modification (08\_0111 MOD 3)

## 1 BACKGROUND

Austar Coal Mine Pty Limited (Austar), a subsidiary of Yancoal Australia Pty Limited, owns and operates the Austar Coal Mine, an underground coal mine located 10 kilometres (km) south of Cessnock, in the Lower Hunter Valley (see Figure 1). The mine is an amalgamation of the previous Ellalong, Southland and Bellbird South collieries. Coal extraction from the mine and its handling, processing and transport operations collectively form the Austar Mine Complex.

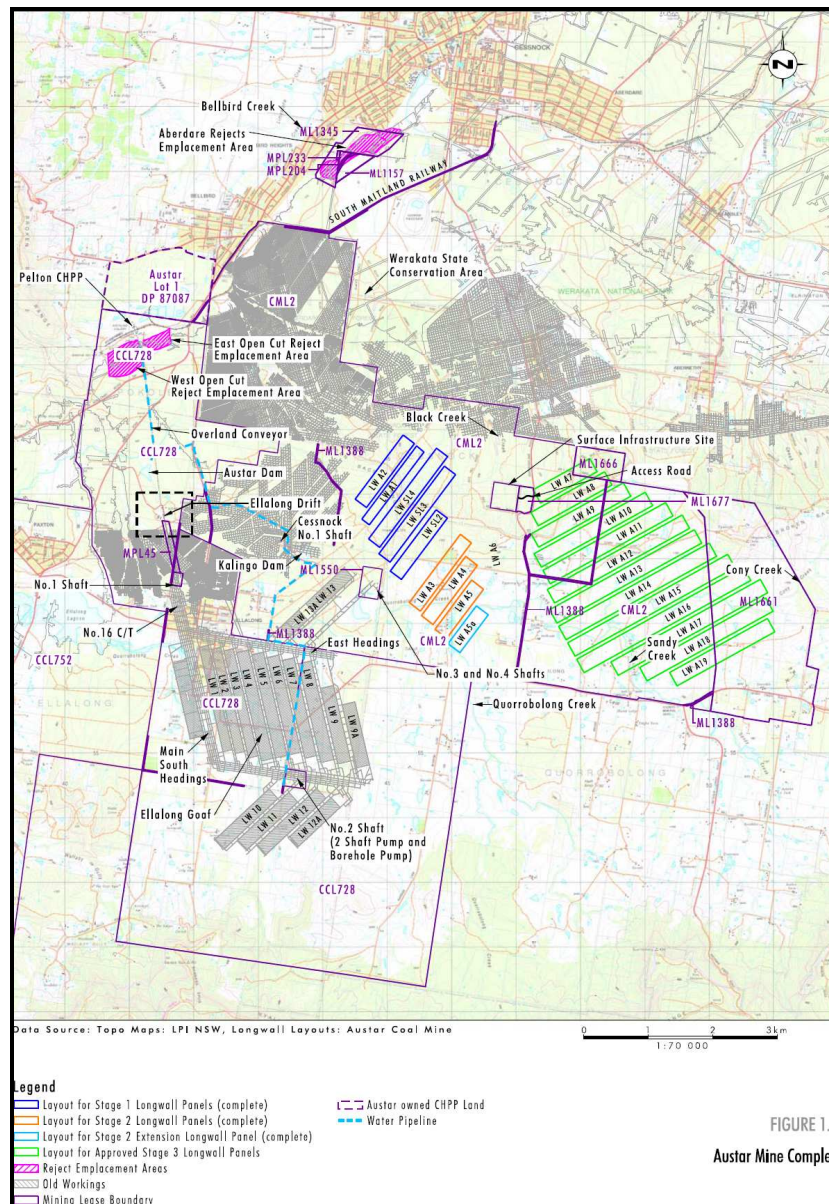


Figure 1: Austar Mine Complex

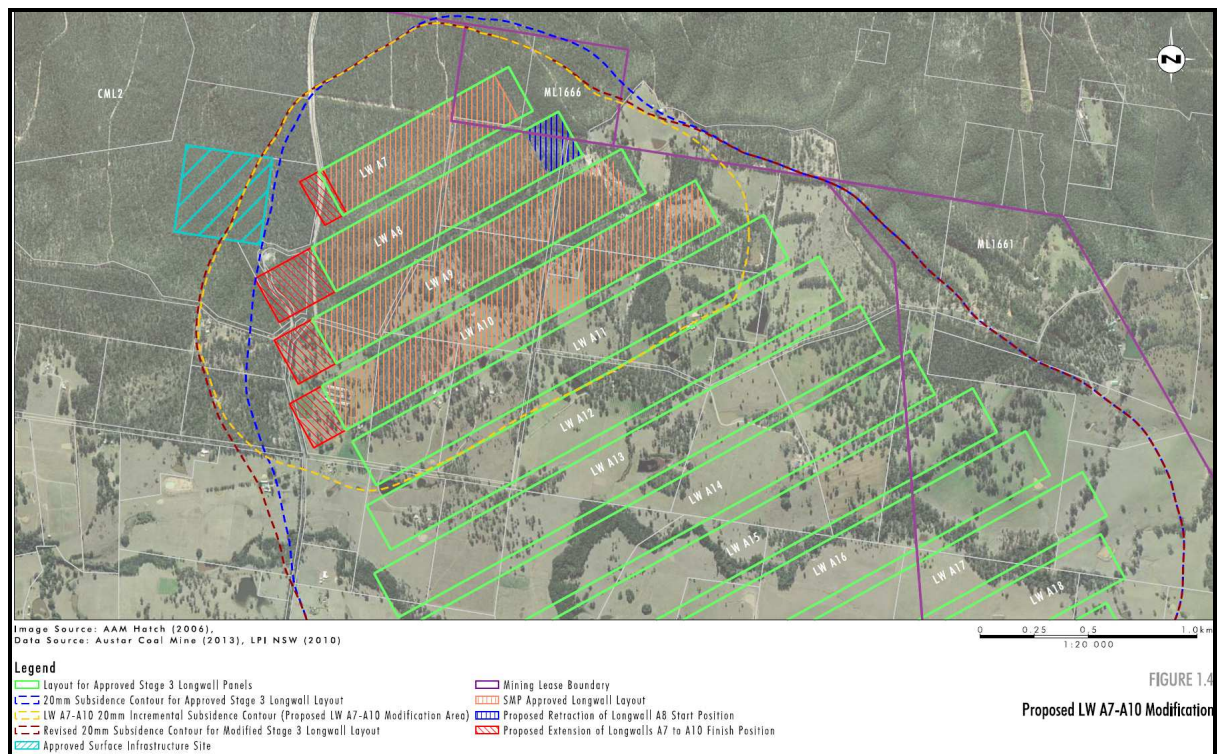
Austar acquired the mine complex in 2004. The complex operates within a number of mining leases, and under 12 separate development consents granted between 1974 and 2002. Mining Stages 1 and 2 are already complete, and Austar is now mining its Stage 3 area. Stage 3 contains longwall panels A7 – A17. This mining is regulated under a Ministerial project approval granted in 2009 (08\_0111).

The project approval is the “dominant” approval at the mine, allowing Austar to extract up to 3.6 million tonnes of run-of-mine coal a year, process this coal at the nearby Pelton coal handling and preparation plant, dispose of coal rejects and tailings, and transport product coal by rail to the Port of Newcastle, and by road to specialist customers.

The approval (see Appendix B) expires on 31 December 2030 and has been previously modified twice, to amend the approved subsidence impact performance measures, and to reconfigure the approved Stage 3 mine plan.

## 2 PROPOSED MODIFICATION

Austar has lodged a modification application (08\_0111 MOD 3) under section 75W of the *Environmental Planning and Assessment Act 1979*, to extend the finishing positions of longwall panels A7, A8, A9 and A10 by 100, 300, 200 and 170 metres (m) respectively (see Figure 2).



**Figure 2: Proposed Longwalls A7-A10 modifications (shown in red)**

The current approved Stage 3 mine plan was established in 2011, based on information available at that time regarding the known extent of geological fault structures and coal quality in the Stage 3 mining area. Additional geological information gathered since 2011 has indicated an igneous dyke structure, which limits the potential location for the eastern (ie commencing) end of the Stage 3 panels.

Austar is currently driving development headings and the install road for Longwall A8, and has separately applied for the Director-General's approval to change the approved layout of these first workings, under condition 3 of schedule 3 of the project approval. This change, which does not form part of the proposed modification, would retract the commencing end of Longwall A8 by 284 m (see Figure 2). However the reduced development timeframe could in turn interrupt the continuity of mining in Stage 3. Austar plans to minimise this potential risk of business interruption by extending the finishing position of Longwall A7, as part of the proposed modification.

Austar has identified the opportunity to further modify the Stage 3 mine plan by extending the finishing positions of Longwall A8, A9 and A10, which it would be able to do due to delays in constructing some items of infrastructure at its Kitchener Surface Infrastructure Site (SIS). The proposed modification would not undermine the SIS, but the limit of subsidence would intersect the SIS. To avoid impacts at the SIS during and following mining of the proposed extensions, surface infrastructure construction would be re-programmed to occur following completion of mining and any resulting subsidence impacts.

The proposed longwall extensions would allow recovery of approximately one million tonnes of high-quality coal which would have otherwise been sterilised under the approved mine plan.

Part of the proposed mining would take place within the Werakata State Conservation Area (SCA). As a consequence, landowner's consent from the Minister for the Environment is required before the modification application can be determined (see section 3.4).

The proposed modification seeks only to make changes to the approved finishing positions of Longwalls A7-A10. It does not seek to change any of the mine's other approved activities, increase the life of the project, change the mining method or the coal production rate. The proposed modification is described in full in the document titled *Austar Coal Mine Longwall A7-A10 Modification Stage 3 Area Environmental Assessment* (the EA, see Appendix C), dated October 2013.

### **3 STATUTORY CONTEXT**

#### **3.1 Modification**

The Department is satisfied that proposed modification can be characterised as a modification to the approved project and is within the scope of section 75W of the EP&A Act. The Department notes that:

- the resulting environmental impacts would be substantially the same as the approved project; and
- there would be no change to the approved mining methods, no increase in coal production rates and no change to coal handling and transport methods.

#### **3.2 Approval Authority**

The Minister for Planning and Infrastructure is the approval authority for this modification application, under section 75W of the EP&A Act. However, the Minister's delegation of 27 February 2013 allows the Director, Mining and Industry Projects to determine the application, as Austar has not reported political donations, Cessnock City Council did not object, and no public objections were received.

#### **3.3 Environmental Planning Instruments**

Section 4.0 of the EA (see Appendix C) assessed the application against relevant environmental planning instruments, including State Environmental Planning Policies (SEPPs) and the *Cessnock Local Environmental Plan 2011*. The Department has reviewed this assessment and concurs with its findings.

#### **3.4 Landowner's Consent**

In accordance with Clause 8F of the *Environmental Planning and Assessment Regulation 2000*, Austar requires landowner's consent from the Minister for the Environment before the modification application can be determined in respect of underground mining activities proposed within the Werakata SCA. Austar referred the modification application and the EA to the Office of Environment & Heritage (OEH), and landowner's consent was granted by the Minister for the Environment on 9 December 2013 (see Appendix E).

### **4 CONSULTATION**

The EA was publicly exhibited between 18 October and 1 November 2013. The Department received 8 submissions. Submissions were received from OEH, the Division of Resources and Energy (DRE) of NSW Trade and Investment, Department of Primary Industries (the NSW Office of Water and the Office of Agricultural Sustainability and Food Security), Environment Protection Authority, NSW Health, Rural Fire Service and the Construction, Forestry, Mining and Energy Union (CFMEU). No community submissions were received.

None of the agencies objected to the proposed modification, and most (except OEH and DRE) raised no issues requiring further assessment, or recommended additional conditions of approval to manage the resulting additional impacts. CFMEU provided its support to the application.



OEH noted the occurrence in the extension areas of *Lower Hunter Spotted Gum-Ironbark Forest EEC*, as well as *Small-flower Grevillea* and *Heath Wrinklewort*, each of which is listed under the *Threatened Species Conservation Act 1995*. OEH recommended that Austar implements its existing biodiversity commitments in its project approval and for it to provide a biodiversity offset if threatened species are significantly impacted by the proposed modification. OEH noted that five Aboriginal cultural heritage sites are located in or near the extension areas, but stated that the predicted minor nature of the impacts to the sites would be able to be addressed by existing approved management strategies. It recommended the development of a suitable subsidence monitoring program for the sites, as well as protocols for the management of new Aboriginal Cultural heritage sites or human remains.

DRE considered that the modification would not substantially change the subsidence risks of the project. It raised a concern that the EA did not describe the rehabilitation domains, and recommended that a Rehabilitation Management Plan is prepared. DRE also recommended that the mine's Subsidence Management Plan and Mining Operations Plan are updated to include the functional domains.

The submissions are provided in Appendix D. Austar subsequently provided the Department with a Response to Submissions (RTS) document, which the Department placed on its website. The RTS is also provided in Appendix D.

## 5 ASSESSMENT

### 5.1 Subsidence

Austar considered the subsidence impacts of the proposed modification on natural and built features above and close to extension areas. The proposed modification would increase the overall subsidence area of the Stage 3 mining area (see Figure 2). The assessment also noted that the retraction to Longwall A8 would likely lead to a reduction in impacts in this location. The retraction to Longwall A8 does not form part of this application, and is being separately considered by the Department.

The predicted total vertical subsidence and maximum tilts in Stage 3 for Longwalls A7-A10 and for all Stage 3 Longwalls, under both the approved project and the proposed modification, are compared in Table 1. This shows that total subsidence and maximum tilts would be the same or similar as the existing approved levels.

The most significant change in subsidence predictions is increased vertical subsidence above the western ends of Longwalls A9 and A10, where the panels undermine Quorrobolong Road. This would lead to a predicted increase in subsidence of the road from 325 millimetres (mm) to 1250 mm. However only minor cracking of the road surface is predicted to occur (up to 25 mm wide cracks), and any such impacts would be easily remediated. Austar would install an additional subsidence monitoring line to monitor any impacts as mining in the extension areas develops. It is also consulting with Cessnock City Council regarding appropriate remediation strategies for the predicted impacts to Quorrobolong Road, and would prepare an individual Built Features Management Plan prior to undermining the road. All other roads in the study area would experience subsidence levels substantially the same as under the approved project.

**Table 1:** Key maximum subsidence predictions

<b>Longwalls</b>	<b>Mine plan</b>	<b>Maximum predicted total subsidence (mm)</b>	<b>Maximum predicted tilt (mm/m)</b>
A7-A10	Approved layout	1500	5.5
	Proposed modified layout	1500	6.0
A7-A19	Approved layout	1650	6.0
	Proposed modified layout	1675	6.0

Four privately-owned residences are located within the 20 mm subsidence limit of the proposed modification. Three of these residences lie outside the mining area, and one is located above the Longwall A10-A11 chain pillar. Predicted total subsidence, tilts and strains would be substantially the same as currently approved at all residences, and are not predicted to reach levels where structural damage or loss of serviceability may result. Notwithstanding, individual Built Features Management Plans would be prepared by Austar in consultation with each affected landowner to set out appropriate impact management strategies for the residences prior to mining in the extension areas.

Rural buildings and farm dams at the finishing (ie western) ends of Longwall A9 and A10 are predicted to experience the full approved range of subsidence impacts. However, maximum predicted vertical subsidence would be the same or very close to existing approved levels, and any impacts would not be expected to affect the serviceability of the buildings. The maximum predicted change in freeboard of the dams is less than 500 mm, which, based on extensive experience of mining beneath dams which has occurred the Southern Coalfield, is reasonably unlikely to result in reduced dam storage capacities, or cause any damage to the dam walls. Appropriate subsidence monitoring and management strategies for the dams would be included in the individual Built Features Management Plans, prepared in consultation with each affected landowner.

Subsidence predictions for all other built features in the extension areas, including electricity and telecommunications infrastructure, are similar to those previously assessed and approved. Subsidence impacts would continue to be managed under individual Built Features Management Plans for these items.

All built features would remain safe, serviceable and/or easily repairable under the modified mine plan. Any required repairs would be undertaken in accordance with the well-established processes which apply under the *Mine Subsidence Compensation Act 1961*.

The depth of cover and the strength of overlying strata are expected to limit surface impacts on natural features, primarily a small area of steep slopes located at the finishing end of Longwall A8 and two ephemeral drainage lines which cross Longwall A8 and Longwall A9. Any unforeseen impacts to natural features would be expected to be minor and able to be easily remediated. Austar would update its Land Management Plan to reflect the impact management of natural features under the modified mine plan.

Overall, the Department is satisfied that the proposed modification will not result in subsidence impacts which are significantly different to those previously assessed and approved. Only the actual footprint and number of those impacts will vary somewhat. The Department considers that the existing conditions of approval already provide a robust regulatory framework to manage, mitigate and/or compensate the predicted subsidence impacts, and that no additional conditions of approval are required to manage subsidence impacts in the proposed extension areas.

## 5.2 Other Impacts

The Department has considered the other potential impacts of the proposed modification, and has summarised these considerations in Table 2.

**Table 2:** Assessment of other issues

<b>Issue</b>	<b>Consideration</b>	<b>Recommendation</b>
<i>Surface Water &amp; Flooding, Groundwater</i>	<ul style="list-style-type: none"> <li>No watercourses carrying regular flows would be undermined in the extension areas.</li> <li>The approved Watercourse Management Plan would continue to apply to the modified project.</li> <li>The extension areas lie outside of the 1:100 ARI flood extent of the two major water catchments otherwise affected by Stage 3.</li> <li>The minor nature of the extensions is unlikely to increase the approved depressurisation of deeper groundwater resources or increase hydraulic connectivity with shallow alluvial aquifers.</li> <li>The Water Management Plan under the mine's Extraction Plan would be updated to reflect the proposed modification.</li> </ul>	<ul style="list-style-type: none"> <li>No change to existing water conditions.</li> </ul>
<i>Biodiversity &amp; Rehabilitation</i>	<ul style="list-style-type: none"> <li>No vegetation clearing is required for the proposed modification.</li> <li>Subsidence is unlikely to cause surface cracking or increase approved biodiversity impacts.</li> <li>The proposed modification would not significantly affect the <i>Lower Hunter Spotted Gum-Ironbark Forest EEC</i>, listed threatened flora (including Small-flower Grevillea and Heath Wrinklewort) or threatened fauna habitat.</li> <li>Any additional biodiversity Impacts are unlikely to reach an extent which would require a biodiversity offset.</li> </ul>	<ul style="list-style-type: none"> <li>No change to existing biodiversity management conditions.</li> <li>No change to existing rehabilitation conditions.</li> </ul>

	<ul style="list-style-type: none"> <li>• Austar's existing biodiversity commitments are to be implemented through its approved Biodiversity Management Plan under the Stage 3 Extraction Plan. This plan would be reviewed and updated as necessary to reflect the proposed modification.</li> <li>• The approved Stage 3 Extraction Plan also includes a Land Management Plan. A separate Rehabilitation Management Plan is approved for the SIS. These documents both show rehabilitation domains and describe in detail rehabilitation activities for the project. They would be updated as necessary to reflect the proposed modification.</li> <li>• Austar would amend the current Mining Operations Plan and Subsidence Management Plan for Stage 3 (both separately assessed and approved by DRE), to include a description of the MOD 3 rehabilitation domains.</li> </ul>	
<i>Aboriginal Heritage &amp; Historic Heritage</i>	<ul style="list-style-type: none"> <li>• Five Aboriginal heritage sites are located in the extended 20 mm subsidence limit. However, none have high archaeological significance, and none would be directly undermined.</li> <li>• There is no predicted increase to approved impacts at any Aboriginal heritage site. Predicted impacts would be managed under the approved Aboriginal Cultural Heritage Management Plan, which forms part of the Stage 3 Extraction Plan, and would be updated as necessary to reflect the proposed modification.</li> <li>• The Aboriginal Cultural Heritage Management Plan also includes protocols for managing new sites, and protocols to manage human remains, if any are discovered.</li> <li>• Six historic heritage items are located in the extension area. All six would be managed under the approved Heritage Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• No change to existing heritage conditions.</li> </ul>
<i>Noise &amp; Vibration</i>	<ul style="list-style-type: none"> <li>• The mine's above-ground activities would not change, therefore no additional noise impacts are likely.</li> <li>• The timing and extent of surface vibration events caused by underground goaf collapses are difficult to predict, however vibration levels are unlikely to be significant and/or cause structural damage, or to be increased in intensity or frequency under the proposed modification.</li> <li>• The approved Noise and Vibration Management Plan would continue to apply to the extension areas.</li> </ul>	<ul style="list-style-type: none"> <li>• No change to existing noise and vibration conditions.</li> </ul>
<i>Air Quality &amp; Greenhouse Gas Emissions</i>	<ul style="list-style-type: none"> <li>• The proposed modification does not seek to change the ROM coal production rate or any of the mine's processing or transportation activities. Therefore no additional air quality impacts or greenhouse gas emissions would be expected.</li> </ul>	<ul style="list-style-type: none"> <li>• No change to existing air quality conditions.</li> </ul>
<i>Socio-Economic and Community</i>	<ul style="list-style-type: none"> <li>• The proposed modification would allow continuity of mining in the Stage 3 area and associated continuity of employment for all of the mine's workers.</li> <li>• Austar's access compensation agreement (an amount per tonne for product coal extracted beneath private land) would continue to be offered to any affected landowners.</li> </ul>	<ul style="list-style-type: none"> <li>• No change to existing conditions.</li> </ul>

## 6 CONCLUSION

The Department has assessed the modification application in accordance with the relevant requirements of the EP&A Act. This assessment has found that the environmental impacts of the proposed modification are likely to be either the same, or very similar, as those already assessed and approved, albeit over a somewhat extended footprint. The proposed modification would not vary other approved activities at the mine, and would avoid the potential business interruption resulting from the retraction of Longwall A8. The proposed modification also allows Austar access to a significant resource of high-quality coal which would otherwise be sterilised under the approved mine plan.

Any additional subsidence impacts would be restricted to localised areas and are unlikely to exceed approved levels. The Department is satisfied that any resulting environmental consequences can be adequately monitored, managed and mitigated under the existing conditions of approval. The Department considers that any unpredicted impacts would be able to be successfully avoided, mitigated or otherwise managed under the existing conditions of approval.

The Department believes the proposed modification is in the public interest and should be approved.


## 7 CONDITIONS


Due to the minor nature of the proposed modification and the already robust impact management regime provided by the existing conditions of approval, the recommended conditions (see Appendix A) are purely administrative in nature. Austar has reviewed and accepted these conditions.

## 8 RECOMMENDATION

It is RECOMMENDED that the Director, Mining and Industry Projects, under the Minister for Planning and Infrastructure's delegation dated 27 February 2013:

- **considers** the findings and recommendations of this report;
- **determines** that the proposed modification is within the scope of section 75W of the EP&A Act;
- **approves** the modification application, subject to conditions, under section 75W of the EP&A Act; and
- **signs** the attached notice of modification (Appendix A).

  
Howard Reed  
Manager, Mining Projects  
16-12-13

 17/12/13  
David Kitto  
Director, Mining & Industry Projects

## **APPENDIX A: NOTICE OF MODIFICATION**

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## **APPENDIX B: PROJECT APPROVAL 08\_0111 (AS MODIFIED)**

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## APPENDIX C: ENVIRONMENTAL ASSESSMENT

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The EA is available at [http://majorprojects.planning.nsw.gov.au/page/development-categories/mining--petroleum---extractive-industries/mining/?action=view\\_job&job\\_id=6198](http://majorprojects.planning.nsw.gov.au/page/development-categories/mining--petroleum---extractive-industries/mining/?action=view_job&job_id=6198)

## APPENDIX D: SUBMISSIONS AND RESPONSES

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The submissions and responses are available at

[http://majorprojects.planning.nsw.gov.au/page/development-categories/mining--petroleum---extractive-industries/mining/?action=view\\_job&job\\_id=6198](http://majorprojects.planning.nsw.gov.au/page/development-categories/mining--petroleum---extractive-industries/mining/?action=view_job&job_id=6198)

## **APPENDIX E: LANDOWNER'S CONSENT**

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