MOOLARBEN COAL COMPLEX

UG1 OPTIMISATION MODIFICATION

RESPONSE TO SUBMISSIONS

7 SEPTEMBER 2015
Project No. MCM-14-05
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1 INTRODUCTION

Moolarben Coal Operations Pty Ltd (MCO) prepared the *UG1 Optimisation Modification Environmental Assessment* (EA) to modify both the Stage 1 and Stage 2 Project Approvals (05_0117 and 08_0135, respectively) under section 75W of the New South Wales (NSW) *Environmental Planning and Assessment Act, 1979* (EP&A Act).

The UG1 Optimisation Modification (the Modification) would involve the extraction of additional economically viable coal and improve the mining and processing efficiencies associated with the underground operations at the Moolarben Coal Complex, namely UG1.

The EA was placed on public exhibition by the NSW Department of Planning and Environment (DP&E) from 3 July 2015 to 31 July 2015. During this period, government agencies, non-government organisations, businesses and members of the public were invited to provide submissions on the EA to the DP&E.

2 RESPONSES

The following submissions have been received (Tables 1 and 2):

- 7 submissions from agencies/council providing comments on the Modification.
- 8 submissions from community groups objecting to the Modification.
- 1 submission from a member of the public supporting the Modification.
- 30 submissions from members of the public objecting to the Modification.

MCO's Responses to Submissions are structured as follows:

- Table 3 – Responses to submissions from regulatory agencies and council.
- Table 4 – Responses to submissions from members of the public and community groups.

Table 1
Summary of Regulatory Agencies and Council Submissions

Submission ID No.	Name	Date
A1	Environment Protection Authority (EPA)	31 July 2015
A2	Division of Resources and Energy (DRE)	31 July 2015 and August 2015
A3	Transport for NSW (TfNSW)	30 July 2015
A4	Roads and Maritime Services (RMS)	4 August 2015
A5	Office of Environment and Heritage (OEH)	31 July 2015
A6	Department of Primary Industries (DPI)	6 August 2015
A7	Mid-Western Regional Council (MWRC)	29 July 2015

Table 2
Summary of Community Group and Public Submissions

Submission ID No.	Name	Nature of Submission	Issue ID No.
B1	Correct Planning and Consultation for Mayfield Group	Objection	1, 3, 4, 6, 11, 13, 14
B2	Central West Environment Council	Objection	3, 5, 6, 7, 8
B3	Hunter Communities Network	Objection	1, 2, 9, 11, 12, 13, 14
B4	Hunter Environment Lobby Inc.	Objection	1, 3, 4, 6, 11, 14
B5	Mudgee District Environment Group	Objection	1, 6, 8, 13, 14, 15
B6	Nature Conservation Council	Objection	3, 4, 6, 8
B7	Running Stream Water Users Association	Objection	1, 3, 4, 6, 11, 13, 14
B8	Wollar Progress Association	Objection	11, 13
B9	Alan Leslie	Objection	1, 3, 4, 6, 9, 11, 13, 14
B10	Anthony Lonergan	Objection	3, 4, 11, 14
B11	Bev Atkinson	Objection	1, 3, 4, 6, 11, 13
B12	Bev Smiles	Objection	1, 2
B13	CD and JE Imrie	Objection	1, 2, 3, 4, 6, 9, 10, 11, 13, 14
B14	Charmian Charmian	Objection	1, 3, 4, 6, 11, 13, 14
B15	Daryl Morris	Objection	4, 6, 11
B16	Diane O'Mara	Objection	1, 2, 3, 4, 5, 6, 9, 11, 12, 13, 14
B17	Fiona Sim	Objection	1, 3, 4, 6, 11, 13, 14
B18	George Tlaskal	Objection	1, 3, 4, 6, 11, 13, 14
B19	Holly Creenaune	Objection	1, 3, 4, 6, 11, 13, 14
B20	Ian and Robyn Moore	Objection	1, 3, 4, 9, 11, 13, 14
B21	Jan Davis	Objection	1, 3, 4, 6, 9, 11, 13, 14
B22	Jason Ray	Objection	1, 4, 6, 13, 14
B23	Joanna McLachlan	Objection	1, 3, 4, 6, 11, 13, 14
B24	Jolieske Lips	Objection	1, 3, 4, 6, 11, 13, 14
B25	Judith Leslie	Objection	1, 3, 4, 6, 9, 11, 13, 14
B26	Lisa Costello	Objection	1, 3, 4, 6, 11, 13, 14
B27	Lyn Coombe	Objection	1, 6, 13, 14
B28	Marg McLean	Objection	1, 3, 4, 6, 9, 11, 13, 14
B29	Margaret Edwards	Objection	1, 3, 4, 6, 11, 13
B30	Mike Campbell	Objection	1, 3, 4, 6
B31	Nell Schofield	Objection	1, 3, 4, 6, 9, 11, 13, 14
B32	Sarah Kendell	Objection	9, 11
B33	Sharyn Munro	Objection	1, 3, 4, 6, 11, 14
B34	Susanne Skates	Objection	1, 3, 4, 6, 11, 13, 14
B35	Wendy Wales	Objection	3, 4, 6, 11
B36	Wendy White	Objection	1, 3, 4, 6, 11
B37	Chris Wood	Support	No comments/issues.
B38	Name Withheld 1	Objection	1, 3, 4, 6, 11, 13, 14
B39	Name Withheld 2	Objection	1, 3, 4, 6, 11, 13, 14

Table 3
Responses to Submissions – Regulatory Agencies and Council

Comment	Response
A1. Environment Protection Authority (EPA)	
The EPA stated it reiterates noise comments made on the OC4 South-West Modification, which were as follows: *The NIA in the EA utilised meteorological data obtained from the weather station location near the Stage 1 offices while the Mod 9 EA utilised data from the weather station located in proximity to open cut 2 (Rayner residence).*	Responses to the EPA's comments on the OC4 South-West Modification were provided to the DP&E and published on the DP&E's website: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7030. The Noise Assessment (SLR Consulting, 2015) identified assessable meteorological conditions for the 42 month period from January 2011 to June 2014 in accordance with the methodology specified in the INP based on meteorological data from the EPA approved weather station WS3, which is located between OC4 and the closest receivers to the south-west (i.e. Cooks Gap). The analysis was not based on the weather station located near the Stage 1 offices as stated by the EPA.
The EPA stated that further consideration of the low frequency component of noise emissions from the Moolarben Coal Complex may be warranted.	Section 5.3 of Appendix C of the EA describes: *Noise measurements of the existing Moolarben Coal Complex noise emissions (coinciding with temperature inversions) were conducted by SLR for a duration of one week in August 2014 using a full spectrum noise monitor (ie capacity to measure low frequency noise) located at the receiver 175 (MCO) being generally representative of the nearest Cooks Gap receivers to the Moolarben Coal Complex.* *The noise data were then analysed in accordance with the INP requirements to estimate the $L_{eq(15minute)}$ A and C weighted noise levels of the Moolarben Coal Complex operations and this coincided with strong temperature inversions (average approximately 5.6°C/100 m) between 0000 hours to 0500 hours. The measurement results at the receiver 175 (MCO) show a mean difference of 13.3 dB between the estimated (mine-contributed) intrusive $L_{Aeq(15minute)}$ and the $L_{Ceq(15minute)}$ noise levels (ie below the INP's low frequency modifying threshold of 15 dB).* *On review of this data and operator-attended noise monitoring results presented in the MENMRs, it is concluded that Moolarben Coal Complex noise emissions do not contain "dominant low frequency content" in accordance with the INP's assessment procedures.*
The EPA stated it reiterates surface water comments made on the OC4 South-West Modification.	Responses to the EPA's comments on the OC4 South-West Modification were provided to the DP&E and published on the DP&E's website: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7030. A Water Management Plan for the Moolarben Coal Complex was prepared in consultation with the EPA and approved on 31 July 2015. The Water Management Plan is available on MCO's website: http://www.moolarbencoal.com.au/licences-approvals/management-plans/. The Water Management Plan includes detail on the water management system design and management of dirty water. In accordance with Condition 5, Schedule 5 of the Stage 1 Project Approval (05_0117) and Condition 5, Schedule 6 of the Stage 2 Project Approval (08_0135), within three months of the approval of any modification, MCO will review and, if necessary, revise the Water Management Plan in consultation with DPI Water and to the satisfaction of DP&E.

<table>
<tr><th>Comment</th><th>Response</th></tr>
<tr><td colspan="2">A2. Division of Resources and Energy (DRE)</td></tr>
<tr><td>The DRE noted that MCO would be required to submit a revised Mining Operations Plan (MOP) to include the Modification if approved.</td><td>Noted. MCO would prepare necessary documentation required under the modified Project Approvals (if granted) and relevant mining titles.</td></tr>
<tr><td>In its supplementary submission, the DRE stated it considers the existing rehabilitation conditions are sufficient to meet DRE's requirements in conjunction with the following recommendations:
All references to Executive Director Mineral Resources be replaced with Secretary NSW Department of Industry.
The following reference to Water Quality is included.
<table><tr><td>Water Quality</td><td>Water retained on site is fit for the intended land use(s) for the post-mining domain(s).

Water discharged from site is consistent with the baseline ecological, hydrological and geomorphic conditions of the creeks prior to mining disturbance.

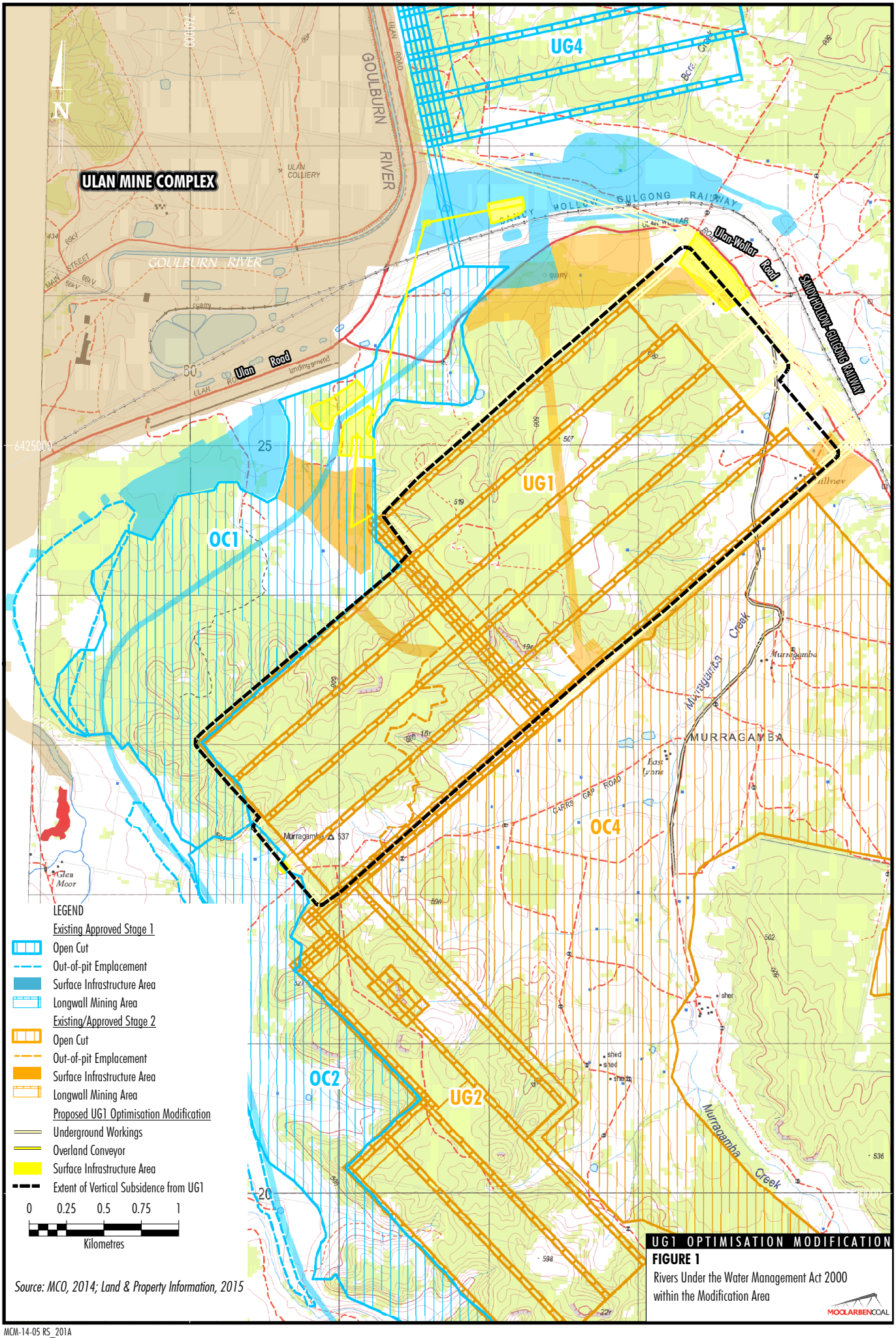
Water management is consistent with the regional catchment management strategy.</td></tr></table></td><td>MCO generally accepts the proposed conditions.

However, MCO considers that, with the inclusion of DRE's first two recommendations on water quality, the third recommendation is superfluous. The Water Management Plan for the Moolarben Coal Complex has been, and will continue to be, prepared in consultation with DPI Water and EPA and considers relevant regional water management objectives. On this basis, DRE's proposed third water quality objective is not warranted.</td></tr>
<tr><td>The DRE stated that risks to Ulan-Wollar Road and Sandy Hollow-Gulgong Railway would need specific consideration during the operational stages of the proposal.</td><td>Noted. The relevant Extraction Plans would include specific consideration of management, mitigation and monitoring measures for Ulan-Wollar Road and Sandy Hollow-Gulgong Railway.</td></tr>
<tr><td>The DRE considered there are no feasibility issues affecting the proposed mine layout arising from health and safety risks due to subsidence.</td><td>Noted.</td></tr>
<tr><td colspan="2">A3. Transport for NSW (TfNSW)</td></tr>
<tr><td>TfNSW stated it had no comment on the proposed modifications.</td><td>Noted.</td></tr>
<tr><td colspan="2">A4. Roads and Maritime Services (RMS)</td></tr>
<tr><td>The RMS stated it was satisfied that the increase in traffic will be accommodated within the road network and has no submission to make for the Modification.</td><td>Noted.</td></tr>
</table>

Comment	Response
A5. Office of Environment and Heritage (OEH)	
The OEH stated it has no specific concerns regarding the impacts to native vegetation or biodiversity as a result of this modification.	Noted.
The OEH requested assurances that no significant natural features are likely to be adversely affected by far field or valley related movements from underground mining.	The Subsidence Assessment (Appendix A of the EA) concludes that the impacts of far-field horizontal movements or valley related movements on natural features within the vicinity of UG1 are expected to be insignificant. MSEC did not identify any significant natural features that may be sensitive to far-field or valley related movements. MCO would comply with the subsidence impact performance measure in Condition 73, Schedule 3 of Project Approval 05_0117 for The Drip requiring "Nil impact or environmental consequences".
A6. Department of Primary Industries (DPI)	
Agriculture NSW and Crown Lands advised they had no issues with the Modification.	Noted.
DPI Water stated MCO must commit to ensuring that water access licences are held for each water source and of the required category, representative with water take requirements of the operation. DPI Water also requested clarification of the quantity of take from the Wollar Creek Water Source and the Upper Goulburn Water Source.	MCO reiterates its commitment to hold relevant water access licences to account for the take of water associated with the Moolarben Coal Complex in each affected water sources. Both the Stage 1 Project Approval 05_0117, Schedule 3, Condition 29 and the Stage 2 Project Approval 08_0135 Schedule 3 Condition 25 already include an identical requirement as follows: *Note: Under the Water Act 1912 and the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the project.* The Modification results in a negligible increase in total maximum water take from the water sources in the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009*. MCO is in consultation with DPI Water to nominate the most appropriate use and works on its water licences for the approved Moolarben Coal Complex, including assigning share components to relevant water sources and categories, where relevant.
DPI Water recommended MCO updates the Water Management Plan and prepares an Extraction Plan in consultation with DPI Water and that reporting against the conditions of water licences be included in the Annual Environmental Management Report.	The approved Water Management Plan for the Moolarben Coal Complex has been prepared in consultation with DPI Water. Within three months of the approval of any modification, MCO will review and, if necessary, revise the Water Management Plan in consultation with DPI Water and to the satisfaction of DP&E, in accordance with Condition 5, Schedule 5 of the Stage 1 Project Approval (05_0117) and Condition 5, Schedule 6 of the Stage 2 Project Approval (08_0135). Section 4.1 of the Water Management Plan outlines reporting in the Annual Review, including a comparison of monitoring results against relevant statutory requirements and limits. Condition 77, Schedule 3 of the Stage 1 Project Approval (05_0117) and Condition 5, Schedule 4 of the Stage 2 Project Approval (08_0135) require the preparation of an Extraction Plan for all second workings on site.
DPI Water requested that the report by Groundwater Imaging Pty Ltd (2014) be provided to DPI Water.	This document has been provided to DPI Water.

Comment	Response
DPI Water requested MCO quantify changes to the site water balance should the Modification be approved. DPI Water also requested the proponent provide information detailing the proposed changes to water management infrastructure and sediment and erosion controls.	Within three months of the approval of any modification, MCO will review and, if necessary, revise the Site Water Balance in consultation with DPI Water and to the satisfaction of DP&E, in accordance with Condition 5, Schedule 5 of the Stage 1 Project Approval (05_0117) and Condition 5, Schedule 6 of the Stage 2 Project Approval (08_0135). Changes to water management infrastructure are described in Section 3.6 of the EA. Further detail would be provided in the revised Site Water Balance.
DPI Water requested further information regarding the water accounting system in Table 1 in Appendix B and how this corresponds to existing licences held by MCO.	Table 1 of Appendix B presents the average simulated water balance for the numerical prediction groundwater model (i.e. inflows, outflows and changes in storage across the entire model domain). Using a conservative approach, the additional licensing requirement as a result of the Modification for the porous rock groundwater source (i.e. the Narrabeen Group sandstones and the Illawarra Coal Measures) under the *Water Act, 1912* is up to 69 megalitres per year (Appendix B of the EA). The Modification results in a negligible increase in total maximum water take from the water sources in the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009*. The total predicted take would remain within MCO's existing licensed allocation.
DPI Water requested additional information on Table 2 in Appendix B (Predicted Average Groundwater Inflow Rates) and whether this includes inflow from water within alluvial sediments.	Table 2 presents the predicted groundwater inflows to UG1 from all water sources.
DPI Water recommended the Water Management Plan incorporate monitoring of groundwater level.	The Groundwater Management Plan approved on 31 July 2015 includes monitoring of groundwater levels. MCO proposes to continue groundwater level monitoring for the Moolarben Coal Complex incorporating the Modification.
DPI Water requested a figure of registered bores in the vicinity of the Moolarben Coal Complex.	Figure 3 of the approved Groundwater Management Plan includes the location of private bores. The Groundwater Management Plan is available on MCO's website: http://www.moolarbencoal.com.au/licences-approvals/management-plans/.
DPI Water advised that any bores for the purpose of mine dewatering require a licence under Part 5 of the *Water Act, 1912*.	Noted. MCO will apply for any necessary licences required under the *Water Act, 1912* for the Moolarben Coal Complex.
DPI Water noted the combined impact of the existing approved development and Modification are within minimal harm considerations for water table and water pressure.	Noted.

Comment	Response
DPI Water requested additional information on the loss of catchment associated with the Remote Services Facilities.	As described in Section 3.6 of the EA, surface water runoff from the proposed Remote Services Facilities would be captured in a small sediment dam that would be constructed for the Modification. The loss of catchment represents 0.3% of the total catchment area, and WRM concluded the change in catchment area to receiving waters due to the Remote Services Facilities would have a negligible impact on the receiving environment (Appendix F of the EA). It is also noted that the recently approved OC4 South-West Modification reduced the catchment area that would be excised from the Wilpinjong Creek catchment. The small sediment dam required for the Remote Service Facilities : • would be solely for the capture, containment and recirculation of drainage to prevent the contamination of a water source; • would be consistent with best management practice; • would not be located on a third order or higher stream; and • would be described in a revised Water Management Plan; and • would be licensed under an EPL. Based on the above, it is concluded that a water access licence for the small sediment dam required for the Remote Service Facilities would not be required.
DPI Water requested further information on the location of rivers as defined under the *Water Management Act, 2000*.	All watercourses shown on the 1:25,000 topographic map (i.e. rivers as defined under the *Water Management Act, 2000*) within the UG1 extent are shown on Figure 1 - enclosed. All of the rivers fall within the definition of a minor stream (i.e. are less than third order under the Strahler stream order system as determined from the published 1:25,000 scale topographic map of the area).



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Comment	Response
A7. Mid-Western Regional Council (MWRC)	
The MWRC noted concern as to the cumulative impact of mining proposals on community and services infrastructure, including housing. The MWRC highlighted the need for assistance to manage growth and ensure strategies and policies are in place and up to date to enable this to happen.	The predicted increase in population associated with the increased workforce sought as part of the Modification is small compared to the population of the Mid-Western Regional LGA (Appendix I of the EA). Coffey (Appendix I of the EA) considers the existing community infrastructure in the Mid-Western Regional local government area (LGA) is capable of servicing the increased population associated with the anticipated increase in the Moolarben Coal Complex workforce. MCO would make additional community enhancement contributions to MWRC in accordance with Project Approval (08_0135) for the increase in the Moolarben Coal Complex workforce (i.e. a total of $515 a year for each full-time equivalent employee/contractor at the Moolarben Coal Complex in excess of 320, indexed in accordance with the Consumer Price Index for the previous quarter). MCO would also continue to make contributions to MWRC in accordance with its Stage 1 Voluntary Planning Agreement and Project Approval (05_0117), and continue its support of local organisations in the region. The cumulative impacts associated with proposed mining projects (such as the Wilpinjong Extension Project, Bylong Coal Project, Bowdens Silver Project and Cobbora Coal Project) would be highly dependent on the timing for each project (Appendix I of the EA). Coffey notes these impacts would occur gradually over several years, which would allow time for housing levels and health and education facilities to adjust to the increasing service demands. It is anticipated that as with other recent mining projects in NSW, a planning agreement in accordance with Division 6 or Part 4 of the EP&A Act would be required by the Development Consent for other proposed (but not approved) mining projects. The proponents of these other mining projects would therefore likely be required to make financial contributions to the MWRC to assist manage potential impacts on community infrastructure.
The MWRC questioned the assumptions regarding workforce accommodation for the proposed Bylong Coal Project.	The cumulative assessment was based on publicly available information for the Bylong Coal Project presented in the Background Document submitted by the proponent with the Request for Environmental Assessment Requirements (Hansen Bailey, 2014). Any change to the workforce accommodation for the Bylong Coal Project that has not been made publicly available would require cumulative assessment by the proponent of the Bylong Coal Project as part of its Environmental Impact Statement (not yet submitted).

Table 4
Responses to Submissions – Members of the Public and Community Groups

Issue ID No.	Subject	Issues Raised	Response
1	Project Components	Concerns were raised regarding the justification for the increase in annual run-of-mine (ROM) coal production from the underground operations, and assessment of this increase with respect to subsidence impacts for UG2 and UG4.	Improvements in underground longwall mining technology and additional engineering work undertaken by MCO indicates that up to 8 million tonnes per annum could be expected to be produced by the underground mining operations. This could be achieved through the use of one longwall machine operating at a faster rate than previously assumed. While the Modification involves an increase in extraction rate in UG2 and UG4, there would be no change to the mine layout or subsidence effects or impacts associated with UG2 and UG4 as part of the Modification (i.e. the increase in extraction rate does not result in a change in the subsidence effects as assessed for the approved operations). The potential impact of increased annual ROM coal production on noise and dust emissions was assessed in detail in Appendices C and D of the EA, respectively.
2	Project Components	Concerns were raised regarding the effect of increased annual ROM coal production from UG4 on The Drip.	As discussed above, there would be no change to the mine layout or subsidence effects or impacts associated with UG2 and UG4 as part of the Modification. The Groundwater Assessment for the Modification (Appendix B of the EA) concluded the Moolarben Coal Complex, incorporating the Modification, would continue to comply with the water performance measure in the Project Approvals for nil impact on the water supply to The Drip.
3	Land Resources	Concerns were raised regarding the impact of cumulative cliff collapse caused by subsidence.	The potential cumulative impacts of rock fall was considered by the DP&E in its *Preliminary Assessment: Moolarben Coal Project Stage 2 & Stage 1 Modification (MOD 3)* (DP&E, 2014): *The Department has considered this issue in some detail, and weighed up the relative merits of resource extraction with the* [sic] *conserving landforms of local or regional significance. Based on this consideration, the Department has concluded that the MCM should be required to ensure the impacts on C9 are no greater than negligible. This is because it is a significant landform in the area; and the fact that it should be relatively easy for MCM to reduce the impacts on this cliff given its location on the edge of LW12.* *With this requirement in place, the Department is satisfied that the most significant cliffs in the area (C7, C9 and C10) would be protected from any significant environmental impacts, and that the predicted impacts on the other cliffs in the area would be acceptable.* Cliffs C7, C9 and C10 are located outside of the extent of UG1 subsidence and are therefore not expected to experience any additional measurable tilts, curvatures or strains as a result of the Modification.

Issue ID No.	Subject	Issues Raised	Response
3 (Cont.)			Section 4.1.1 of the EA describes that the Modification would not change the predicted environmental consequences of cliff collapse caused by subsidence: *There are six cliffs (C1 – C6) located within the extent of UG1 subsidence (Figure 7). There are no cliffs above the underground mining area extensions.* *Three of these cliffs (C2, C3 and C4) are located within the extent of the approved OC4 out-of-pit emplacement (Figure 7) and would be covered with waste rock prior to subsidence occurring as a result of UG1. Cliff C1 is located within the extent of disturbance for an approved conveyor.* *Consistent with the predictions in the Stage 2 PPR, Cliffs C1, C5 and C6 are expected to experience minor impacts (Appendix A). Therefore, the UG1 Optimisation Modification is expected to be consistent with the subsidence impact performance measure of 'no greater subsidence impacts or environmental consequences than predicted in the EA' for other cliffs.*
4	Water Resources	Concerns were raised regarding the adequacy of the groundwater modelling.	Dr Frans Kalf reviewed the Moolarben Coal Complex groundwater model on behalf of the DP&E as part of the assessment process for the Moolarben Coal Project Stage 2. Dr Kalf concluded that the hydrogeological and computer model analysis for the Moolarben Coal Project Stage 2 were satisfactory. The numerical groundwater model used to model the impacts of the Moolarben Coal Complex for the Stage 2 Preferred Project Report was used by HydroSimulations for the Modification (Appendix B of the EA). The calibration performance of the numerical model is consistent with the Murray-Darling Basin Commission Groundwater Flow Modelling Guideline (Murray-Darling Basin Commission, 2001) and the Australian Groundwater Modelling Guidelines (Barnett *et al*., 2012).
5	Water Resources	Concerns were raised regarding the cumulative impact on surface water sources, groundwater sources and baseflows to the Goulburn River.	A Groundwater Assessment, including numerical groundwater modelling, and a Surface Water Assessment Review were undertaken for the Modification (Appendices B and F of the EA, respectively). These assessments relevantly concluded: • The Modification would have no material additional impact on stream baseflows or natural leakage for any of the nearby streams, including the Goulburn River. • There would be no other discernible change in drawdown in alluvial aquifers resulting from the Modification. • No third-party groundwater users would be affected by the Modification, in terms of the minimal harm considerations of the Aquifer Interference Policy. • The impacts of the Modification on surface water resources are small or negligible compared to the approved Moolarben Coal Complex.

Issue ID No.	Subject	Issues Raised	Response
6	Flora and Fauna	Concerns were raised regarding the assessment of the Central Hunter Valley eucalypt forest and woodland and its recent listing under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).	The current Stage 1 mining operations are undertaken in accordance with Approval Decisions (EPBC 2007/3297) granted on 24 October 2007 (and varied by notice on 25 February 2009 and 11 May 2010) and (EPBC 2013/6926) granted on 13 November 2014 under the EPBC Act. The current Stage 2 mining operations are undertaken in accordance with Approval Decision (EPBC 2008/4444) granted on 18 May 2015 under the EPBC Act. The Central Hunter Valley eucalypt forest and woodland was listed as critically endangered under the EPBC Act on 7 May 2015. This listing does not apply to the approved Stage 1 and Stage 2 mining operations pursuant to section 158A of the EPBC Act. The Central Hunter Valley eucalypt forest and woodland equates to the woodland community HU551, which was not mapped within the additional surface disturbance areas associated with the Modification (Appendix E of the EA). As described in the Flora and Fauna Impact Assessment (Appendix E of the EA): *The impacts of subsidence on vegetation above the underground mining areas are not expected to result in the loss of vegetation cover or community structure.* The Flora and Fauna Impact Assessment assessed the potential impacts on Central Hunter Valley eucalypt forest and woodland in detail as it equates to the Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions Endangered Ecological Community. Eco Logical Australia (Appendix E of the EA) concluded: *No portion of this ecological community present within the study area will be removed or modified, this is because the entire extent exists within the underground mining area (5.5 ha).* *It is expected that limited subsidence will occur in the area occupied by this EEC. Studies in the locality have not been able to detect an impact of subsidence on vegetation communities. On this basis, we have assumed that the potential subsidence occurring here will not impact on the extent of this community.* Therefore, no significant impact is anticipated for this threatened ecological community.
7	Flora and Fauna	Concerns were raised regarding the flora and fauna survey effort.	Detailed contemporary ecological impact assessments were prepared by Moolarben Biota (2006) and Ecovision (2008) for Stages 1 and 2 of the Moolarben Coal Project respectively. An ecological impact assessment was also undertaken in 2012 for the Moolarben Coal Project Stage 1 Modification 9 EA (EMGA Mitchell McLennan, 2013). These surveys were supplemented by specific flora and fauna field surveys conducted in the Modification additional areas (i.e. associated with surface disturbance and/or the underground mining area extensions) in July 2014 by Eco Logical Australia (Appendix E of the EA). In addition, the Flora and Fauna Impact Assessment conservatively assumed the presence of threatened species, where potential habitat was present (Appendix E of the EA).

Issue ID No.	Subject	Issues Raised	Response
8	Flora and Fauna	Concerns were raised regarding the assessment of increased subsidence on biodiversity above UG1.	The Flora and Fauna Impact Assessment considered the outcomes of the Subsidence Assessment for the Modification (Appendix A of the EA), which assessed the potential increased subsidence for the extent of UG1. As described in the Flora and Fauna Impact Assessment (Appendix E of the EA): *…Subsidence of vegetation within the underground mining area is not expected to result in the loss of vegetation cover or community structure. Fauna habitat (including that identified as Koala habitat) will not be directly impacted by the occurrence of subsidence...*
9	Air Quality	Concerns were raised regarding health issues associated with increased dust emissions.	The Air Quality Assessment (Appendix D of the EA) predicts that dust emissions generated by Moolarben Coal Complex incorporating the Modification would comply with all relevant dust criteria set by the NSW Government at privately owned residences for the modelled scenario.
10	Noise	Concerns were raised regarding the classification of Goulburn River Stone Cottages as a commercial receiver.	It is noted that of the three receivers identified on Property 11, two receivers used as accommodation facilities are classified as commercial and one receiver is classified as private. This classification is consistent with the Noise and Vibration Impact Assessment for the approved Modification 9 to the Stage 1 Project Approval. Nonetheless, it is noted that Appendix E of Appendix C of the EA demonstrates that all three receivers would comply with the intrusive project-specific noise level for rural residential.
11	Rail Transport	Concerns were raised regarding the increased peak number of trains and cumulative noise and dust impacts.	The Australia Rail Track Corporation (ARTC) operates the Hunter Valley Coal Rail Network in NSW. Noise emissions from the rail network are regulated by ARTC's Environment Protection Licence 3142. The average Project-related rail noise level increase for both day and night is 0.3 dBA (i.e. less than 0.5 dBA) and the peak Project-related rail noise level increase for both day and night is 0.5 dBA. SLR Consulting (Appendix C of the EA) also concluded that the nearest potentially affected villages of Ulan, Araluen, Wollar, Mogo, and Barigan are located well beyond rail noise affected areas for daytime and night-time rail movements on both an average and peak basis.

Issue ID No.	Subject	Issues Raised	Response
11 (Cont.)			Todoroski Air Sciences has provided advice to MCO on the dust emissions associated with rail transport. Assessments conducted for the Mangoola Coal Mine (Todoroski Air Sciences, 2013a) and Bengalla Coal Mine (Todoroski Air Sciences, 2013b) assessed the potential dust impacts associated with rail transport using dispersion modelling. The studies were based on up to 10 train movements per day, and found that at distances approximately 50 m from the rail centre line the dust levels due to coal from wagons were generally low and the potential for dust impacts to arise from this activity was unlikely. Another study of dust emissions generated during rail transport of coal conducted by Katestone Environmental for Queensland Rail Limited (Connell Hatch, 2008) found that based on monitoring and modelling of the emissions and impacts of coal train wagons, there appears to be minimal risk of adverse impact on human health. The study found that concentrations of coal dust at the edge of the rail corridor are below levels known to cause adverse impacts on amenity. A more recent review of a study conducted for the ARTC (Ryan and Wand, 2014) for trains travelling on the Hunter Valley network found no significant difference in the particulate matter measurements for passing freight and coal trains (loaded and unloaded). Todoroski Air Sciences considers the findings of these studies indicate that the potential for any adverse air quality impacts associated with coal dust generated during rail transport would be low.
12	Road Transport	Concerns were raised regarding traffic delays associated with increased train movements.	An assessment of delays at railway level crossings was conducted as part of the Road Transport Assessment (Appendix H of the EA). The Road Transport Assessment assumed that during the road peak hour, up to three trains may pass through any crossing on the Ulan Line, noting that the timetable suggests that during the majority of on-street peak hours, no more than two train movements occur. The results indicate that the probability of a vehicle being delayed at the level crossings on the Ulan Line near the Moolarben Coal Complex is very low.
13	Public Safety	Concerns were raised regarding the highwall instability at OC1.	The Modification would not change the approved open cut mining methods, approved open cut extent, maximum production rates, fleet or waste rock management (Section 3.2 of the EA). Recent issues associated with the OC1 highwall are not related to the Modification. The highwall instability associated with OC1 occurred in an area of the Moolarben Coal open cut pit. MCO has been working closely with relevant regulatory agencies to manage the impacts associated with the highwall instability. MCO has received technical advice that coal can be safely extracted from the underground mining operations and the instability associated with the OC1 highwall is of no consequence for the UG1 mine plan. The Modification would not increase public safety risk. The Extraction Plan for UG1 would include a Public Safety Management Plan as required under Condition 5, Schedule 4 of the Stage 2 Project Approval (08_0135) that would outline measures to maintain public safety.

Issue ID No.	Subject	Issues Raised	Response
14	Socio-economic	Concerns were raised regarding overstatement of positive employment benefits generated by the Modification.	The Community Infrastructure Assessment was based on planned employment numbers for the Moolarben Coal Complex comprising: • a peak construction workforce of 250 personnel for a short period during 2017; and • an operational workforce of approximately 667 personnel on average. Yancoal Australia has invested significant capital in the Moolarben Coal Complex, and ongoing investment at the Moolarben Coal Complex is planned.
15	Community Consultation	Concerns were raised regarding community consultation.	MCO sent a briefing letter (dated April 2015) to the Chair of the Community Consultative Committee providing an overview description of the Modification and proposed scope of environmental assessment. A description of the Modification was provided to the Community Consultative Committee at its meeting in May 2015. All Community Consultative Committee members were provided with a copy of the EA. The EA for the Modification was placed on public exhibition for a period of four weeks and was placed on the MCO website.

3 REFERENCES

Barnett, B, Townley, L.R., Post, V., Evans, R.E., Hunt, R.J., Peeters, L., Richardson, S., Werner, A.D., Knapton, A. and Boronkay, A. (2012) *Australian Groundwater Modelling Guidelines*. Waterlines report 82, National Water Commission.

Connell Hatch (2008) *Final Report, Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains Goonyella, Blackwater and Moura Coal Rail Systems Queensland Rail Limited*. March 2008.

Department of Planning and Environment (2014) *Preliminary Assessment: Moolarben Coal Project Stage 2 & Stage 1 Modification (MOD 3) – Director-General's Environmental Assessment Report Section 75I of the Environmental Planning and Assessment Act 1979*. February 2014.

Ecovision (2008) *Ecological Impact Assessment – Stage 2 of the Moolarben Coal Project*.

EMGA Mitchell McLennan (2013) *Ecological Assessment – Moolarben Coal Project Stage 1 Optimisation Modification*.

Hanson Bailey (2014) *Bylong Coal Project – Background Document*. Website: https://majorprojects.affinitylive.com/public/23cb17042d34d338c7cb71d3fb792999/Bylong%20Coal%20Project%20-%20Preliminary%20Environmental%20Assessment.pdf

Moolarben Biota (2006) *Moolarben Coal Project Flora, Fauna and Aquatic Ecology Assessment*.

Murray-Darling Basin Commission (2001) *Groundwater flow modelling guideline*. Website: http://www.mdbc.gov.au/nrm/groundwater/groundwater_guides/

NSW Government (2014) *Voluntary Land Acquisition and Mitigation Policy*. Released December 2014.

Planning Assessment Commission (2014) *Port Waratah Coal Services Terminal 4 Project Review Report*. December 2014.

Ryan, L. and Wand, M. (2014) Re-*analysis of ARTC Data on Particulate Emissions from Coal Trains*. NSW Environment Protection Authority. Prepared by accessUTS Pty Ltd. February 2014.

Todoroski Air Sciences (2013a) *Air Quality and Greenhouse Gas Assessment Mangoola Coal*. May 2013.

Todoroski Air Sciences (2013b) *Air Quality and Greenhouse Gas Assessment Continuation of Bengalla Mine*. July 2013.