



Our Ref: 20020_R17_Response to Agency Advice_Final

20 September 2024

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Department of Planning, Housing and Infrastructure

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Dear Jack

RE: Ulan Coal Modification 6 Amendment Report - Response to Agency Advice

Ulan Coal Mines Pty Limited (UCMPL) submitted a modification to Project Approval (PA) 08_0184 in November 2022 to maximise resource recovery from the existing underground mining operations by extending some of the currently approved longwall panels to extract additional coal within existing mining lease (ML) and exploration licence (EL) areas.

The Modification Report was placed on public exhibition during November and December 2022 and, in response to community and government agency submissions, a Submissions Report was lodged to the then Department of Planning and Environment (DPE) (now Department of Planning, Housing and Infrastructure [DPHI]) in August 2023.

Following lodgement of the Submissions Report and in consideration of operational constraints (including development float, dewatering infrastructure and ventilation), UCMPL sought to amend the proposed underground mine plan with a reduced underground mining area within the original modification footprint. An Amendment Report was lodged with DPHI in May 2024.

Following the submission of the Amendment Report, it is understood that advice has been received from:

- DPHI
- NSW Environment Protection Authority (EPA)
- NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- Mid-Western Regional Council (MWRC)
- Department of Regional NSW – Mining, Exploration and Geosciences (MEG)

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- Department of Regional NSW – Resources Regulator (RR)
- Biodiversity, Conservation and Science Group (BCS).

The following section responds to the specific matters raised by each agency advice. The issues raised in the agency advice are identified in the following sections in text boxes, with the response provided following each text box.

1.0 Department of Planning, Housing and Infrastructure

1.1 Visual

1. Given that the amended modification has reduced the number of ventilation shafts and dewatering bores proposed, can you please provide an updated summary of the distances between these three receivers [R254, R34, R61] and the closest surface infrastructure proposed and whether the visual impact has changed for these receivers.

The removal of two of the additional ventilation shafts and three of the dewatering bores originally included in the Proposed Modification has resulted in an increase in the separation distance of R254 from the closest surface infrastructure from 1.4 km to 2.9 km, thus reducing the potential for visual impacts (refer to **Table 1**). The proposed amendments result in no changes for receptors R34 or R61.

Table 1 Distances between Residential Receivers and Surface Infrastructure

	Distance to nearest surface infrastructure (km)		
	R34	R61	R254
Proposed Modification	1.6 km	4 km	1.4 km
Amended Modification	1.6 km	4 km	2.9 km

Surface infrastructure would be constructed from non-reflective materials in natural tones to minimise visibility against adjacent vegetation and would be shielded by surrounding open forest vegetation, which has a canopy reaching heights of between 10 and 20 m. Therefore, while it is possible infrastructure may be visible, it is not expected to be visually intrusive as it would impact only a small part of the distant viewshed.

2. Provide the approximate height (above surface level) of the proposed ventilation shaft.

The approximate height of the proposed ventilation shaft (above ground level) is 5 m.

3. The Department notes that the project is located within 200 km of the Siding Spring Observatory, and as such any potential impacts on the observatory from night-time lighting at the project are required to be considered. Can you please identify whether night-time lighting is required for the modification and if so, address how the modification has considered the 'good lighting principles' provided in the Dark Sky Planning Guideline (DPE, 2023).

The Dark Sky Region in NSW is centred on the Observatory at Siding Spring as its continued operation is dependent on the dark night sky being free from light pollution. The *Dark Sky Planning Guideline* (DPE, 2023) provides technical information on good lighting design, use of shielded, downward facing and site appropriate lighting.

There will be minor night lighting provided around the fan and substation infrastructure to allow safe access/egress and emergency escape. In accordance with the principles of the Dark Sky Planning Guideline, the lighting will be attached to the associated buildings (maximum height 5 m) and will be directed downwards, facing towards access areas only. The proposed lighting is not intended to provide work area lighting over the entire installation. Energy efficient bulbs and timer switches will be utilised where practicable. As described in response to paragraph 1 above, surface infrastructure would be constructed from non-reflective materials in natural tones and night lighting would be shielded by the surrounding open forest vegetation, which has a canopy reaching heights of between 10 and 20 m.

Provided that appropriate design principles are incorporated into the night lighting for ancillary infrastructure, and based on the distance to Siding Springs Observatory (approximately 120 km or more), it is considered likely there will be no visual impacts on the existing night time landscape.

1.2 Noise

4. Table 4.3 of the noise impact assessment (October 2022) prepared for the modification report noted that potential noise level exceedances are predicted at R34 and R354 [R254] outside of recommended standard construction hours. Given that the amended modification has reduced the number of ventilation shafts, can you please confirm whether these predicted exceedances are still likely to occur.

The Noise Impact Assessment prepared for the Proposed Modification identified potential exceedances of the adopted Noise Management Level of 35 dB(A) associated with the construction of ventilation shafts at times outside of recommended standard construction hours. Exceedances were predicted at R254 under standard meteorological conditions and at both R34 and R254 under noise-enhancing meteorological conditions.

The reduction in the number of ventilation shafts as set out in the Amended Modification will result in a reduction in noise levels at some receivers during the construction period. Review of the modelling results for the ventilation shaft construction scenarios has determined that the exceedances predicted for R254 will no longer occur under the Amended Modification. However, the exceedance predicted for R34 will remain under noise-enhancing meteorological conditions outside recommended standard construction hours.

The noise management commitments described in the Modification Report will be implemented to mitigate this potential exceedance at R34.

1.3 Heritage

The amendment report prepared for the modification (including the updated subsidence assessment) notes that the change in mine plan will reduce the number of Aboriginal sites expected to either be directly impacted or potentially impacted from subsidence. Please provide an updated list of all Aboriginal sites likely to be impacted as a result of the modification (as amended) and include the heritage significance of each Aboriginal site in addition to the probability of impact and probability of rock fall/fracturing (for sites with potential subsidence impacts).

As requested, a consolidated list of all potential impacts to Aboriginal sites is provided in Table 2 below.

It is noted that as a result of mine plan amendments and reductions in surface disturbance for the Amended Modification, there are no longer any sites predicted to be directly impacted by surface disturbance. Therefore, the 51 sites listed in Table 2 below are those that will potentially be indirectly impacted by subsidence.

Table 2 Potential impacts to Aboriginal sites

ID #	Site name	AHIMS #	Site type	Probability of perceptible impact	Probability of rock fall or significant rock fracturing	Heritage Significance
175	MC18	36-3-1518	Rock shelter with artefacts	50%	10%	Low - possibly moderate
176	MC19	36-3-1519	Rock shelter with artefacts	50%	10%	Low
178	MC21	36-3-1521	Rock shelter with artefacts	70%	20%	Low
179	MC22	36-3-1522	Rock shelter with artefacts	70%	20%	Low
549	MC65	36-3-1652	Rock shelter with PAD	50%	10%	Low
550	MC66	36-3-1653	Rock shelter with PAD	50%	10%	Low
722	MC234	36-3-1825	Rock shelter with PAD	70%	20%	Low
723	MC235	36-3-1826	Rock shelter with PAD	70%	20%	Low
724	MC236	36-3-1827	Rock shelter with PAD	20%	5%	Low
725	MC237	36-3-1828	Rock shelter with PAD	70%	20%	Low
726	MC238	36-3-1829	Rock shelter with PAD	70%	20%	Low
727	MC239	36-3-1830	Rock shelter with PAD	50%	10%	Low
728	MC240	36-3-1831	Rock shelter with artefacts	50%	10%	Low
730	MC242	36-3-1833	Rock shelter with artefacts	70%	20%	Moderate
731	MC243	36-3-1834	Rock shelter with PAD	70%	20%	Low
732	MC244	36-3-1835	Rock shelter with PAD	50%	10%	Low
733	MC245	36-3-1836	Rock shelter with PAD	50%	10%	Low
734	MC246	36-3-1837	Rock shelter with artefacts	50%	10%	Low - possibly moderate
735	MC247	36-3-1838	Rock shelter with artefacts	70%	20%	Moderate-High
738	MC250	36-3-1841	Rock shelter with artefacts	70%	20%	Low
741	MC253	36-3-1844	Rock shelter with artefacts	20%	5%	Low-Moderate
742	MC254	36-3-1845	Rock shelter with PAD	70%	20%	Low
743	MC255	36-3-1846	Rock shelter with PAD	70%	20%	Low
744	MC256	36-3-1847	Rock shelter with artefacts	70%	20%	Low
749	MC261	36-3-1852	Rock shelter with artefacts	70%	20%	Low
750	MC262	36-3-1853	Rock shelter with artefacts	70%	20%	Low

ID #	Site name	AHIMS #	Site type	Probability of perceptible impact	Probability of rock fall or significant rock fracturing	Heritage Significance
751	MC263	36-3-1854	Rock shelter with artefacts	70%	20%	Low-Moderate
775	MC287	36-3-1878	Rock shelter with PAD	50%	10%	Low - possibly moderate
776	MC288	36-3-1879	Rock shelter with PAD	50%	10%	Low
777	MC289	36-3-1880	Rock shelter with artefacts	50%	10%	Low
778	MC290	36-3-1881	Rock shelter with PAD	50%	10%	Low
779	MC291	36-3-1882	Rock shelter with PAD	50%	10%	Low
787	MC299	36-3-1890	Rock shelter with PAD	50%	10%	Low
788	MC300	36-3-1891	Rock shelter with artefacts	50%	10%	Low
789	MC301	36-3-1892	Rock shelter with artefacts	50%	10%	Low
790	MC302	36-3-1893	Rock shelter with artefacts	50%	10%	Low-Moderate
806	MC318	36-3-1909	Rock shelter with PAD	50%	10%	Low
1618	MC360	36-3-3311	Rock shelter with artefacts	70%	20%	Low
1668	MC410	pending	Rock shelter with Art	50%	10%	Low
1669	MC411	pending	Rock shelter with artefacts	50%	10%	Low - possibly moderate
1670	MC412	pending	Rock shelter with artefacts	70%	20%	Low
1671	MC413	pending	Rock shelter with artefacts	20%	5%	Low
1672	MC414	pending	Rock shelter with artefacts	70%	20%	Low
1673	MC415	pending	Rock shelter with artefacts	50%	10%	Moderate-High
1678	MC419	pending	Rock shelter with artefacts	50%	10%	Low
1679	MC420	pending	Rock shelter with PAD	50%	10%	Low
1680	MC421	pending	Rock shelter with PAD	50%	10%	Low
1681	MC422	pending	Rock shelter with artefacts	70%	20%	Low
1682	MM201110-2	pending	Grinding grooves	50%	n/a	Uncertain
1683	MM221020-2	pending	Grinding grooves	20%	n/a	Uncertain
1684	MM1510-3	pending	Grinding grooves	20%	n/a	Uncertain

2.0 NSW Environment Protection Authority

2.1 Greenhouse Gas

Following further consultation, UCMPL's responses to the EPA's comments on greenhouse gas emissions are limited to matters relating directly to the assessment of this modification application.

In particular, UCMPL refers to the information set out in the Amended Greenhouse Gas and Energy Assessment (Airen Consulting, April 2024) and confirms that the greenhouse gas emissions outlined in that report are specific to the modification application (i.e. Mod 6), and incremental to the Ulan Coal Complex emissions that are approved under the existing consents (including PA 08_0184), which we note permits mining up to 30 August 2033. UCMPL also confirms it is committed to implementing the mitigation measures set out in the Amended Greenhouse Gas and Energy Assessment (Airen Consulting, 2024) and as summarised in Appendix 3 of the Amendment Report, along with existing mitigation measures required by PA08_0184.

2.2 Surface Water

It is recognised that groundwater inflows are predicted to increase and subsequent surface volume discharges are predicted to increase if the amended modification is approved. As a result, the Applicant must clarify if the Talbragar River Discharge structure will be discharging mine-related groundwater into the Talbragar River as part of the amended modification.

Discharges required as a result of the Amended Modification will be incorporated into and managed in accordance with the currently approved methods for managing surplus surface water at the UCC. This includes the approved (but not constructed) Ulan West Water Treatment Facility (also referred to as the Talbragar River Discharge structure), which provides additional capacity to discharge surplus surface water from UCC of up to 17.5 ML/day to the Talbragar River, subject to appropriate licensing and approvals.

As described in Commitment 6.5.5 of Appendix 9 of Project Approval (PA) 08_0184, excess water is managed from UCC in accordance with the following hierarchy:

1. water sharing
2. Bobadeen irrigation
3. offsite discharge.

As mining in Ulan West Underground progresses, should the Talbragar River discharge point be required (noting that offsite discharge is the lowest priority order for management of surplus water), UCMPL will undertake the necessary research studies (as required by Commitment 6.5.6 of Appendix 9 of PA 08_0184) and obtain any required licences and approvals, including applying for a variation to Environment Protection Licence (EPL) 394.

2.3 Hydrogeology

Given this, the EPA recommends that the below conditions on groundwater be added to the development consent if granted:

The Applicant must update the existing Ulan Groundwater Monitoring Program commensurate with the proposed amended modification. The updated Groundwater Monitoring Program must be comprehensive and include:

- *any changes to trigger action response plans as a result of the modification,*
- *renewed mitigation measures plans,*
- *ongoing updates to monitoring data and,*
- *The recommended incorporation of Kelly's Spring and Unnamed Spring into the plan for regular monitoring to identify any unexpected change in spring conditions due to mining activities.*

If the development consent is approved, EPA may also consider the need for groundwater monitoring requirements to be added to EPL 394.

UCMPL has committed to updating the existing Water Management Plan (WMP) to address any changes required as part of the Amended Modification, including any new development consent conditions such as the condition above recommended by the EPA.

2.4 Licensed Discharge Points and Site Water Management

Given this, the EPA recommends that the below condition be added to the development consent if granted:

Within 12-months of the amended project being approved, UCC is required to submit a review of the current site water management strategies encompassing all groundwater management, blending, surface re-use including irrigation, treatment, and discharge locations. The review should consider alternative options for site water management and or improvements to the current water management system with the aim of reducing harm to the environment.

The proposed consent condition related to a review of site water management strategies is noted. UCMPL regularly considers alternative options and iterates on their existing water management practices which are reviewed on an annual basis.

The UCC water system will continue to be managed in accordance with the existing WMP, which will be updated as required to address new development consent conditions as part of the Amended Modification, if granted.

3.0 DCCEEW Water Group (a division of NSW DPHI)

3.1 Groundwater Modelling, Impact Assessment and Monitoring

1.1 The Department of Planning, Housing and Infrastructure request the proponent update the groundwater model to:

- include the latest observation data available to at least the end of 2023
- include a calibration using all available datasets, including all government groundwater monitoring bore data and a parametric sensitivity analysis to demonstrate the calibration is focused on the correct parameters
- be in accordance with the guideline, "NSW minimum groundwater modelling requirements for SSD/SSI projects (DPE 2022)"
- include an independent peer review.

UCMPL confirm that the groundwater model including all updates required for the Amended Modification, was prepared in accordance with all relevant guidelines, including the *NSW minimum groundwater modelling requirements for SSD/SSI projects (DPE, 2022)*.

The groundwater model was updated for the Amended Modification to address future dewatering associated with the revised mine plan and recharge rates to the final landform to account for post-mining conditions. These changes were made in consideration of comments received from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) on the Groundwater Impact Assessment prepared for the Proposed Modification (AGE, 2022). There were no changes made to any historical periods covered by the current model calibration, therefore further calibration was not required for the Amended Modification.

The overall calibration was verified in 2022 and had a Scaled Root Mean Square (SRMS) of 3.73%. The Australian Groundwater Modelling Guidelines (Barnett et al., 2012) suggest a target SRMS of less than 10% are considered calibrated.

It is also noted that the Modification 6 Groundwater Assessment (AGE, 2022) was reviewed by the Independent Expert Advisory Panel for Mining (IEAPM) and their comments were addressed in Appendix 1 of the Amended Groundwater Assessment (AGE, 2024).

The original groundwater model and assessment prepared as part of the Proposed Modification and associated groundwater assessment (submitted to DPE in November 2022) were subject to independent peer review by Dr Doug Weatherill from EMM. The peer review indicated that *'the final groundwater impact assessment and supporting numerical groundwater flow modelling are broadly fit for purpose and meet the requirements of the NSW and Commonwealth Governments'*. As there was no material change to the model construction and approach to representing the mine dewatering and the associated analysis, and the amended mine plan is within the footprint of the previous mine plan, the previous peer review was considered applicable to the Amendment Report assessment.

Further model updates and calibration activities are currently being undertaken by UCMPL as part of their ongoing site water management commitments, however the calibrated model as used for the Amended Groundwater Impact Assessment is considered to be appropriate and fit for purpose.

1.2 The Department of Planning, Housing and Infrastructure request the proponent to undertake a revised assessment against the minimal impact considerations of the NSW Aquifer Interference Policy and present this separately for each potentially impacted water source. This is to be completed once the model is recalibrated.

As noted above, while further model updates and calibration activities are currently being undertaken by UCMPL as part of their ongoing site water management commitments, the calibrated model as used for the Amended Groundwater Impact Assessment is considered to be appropriate and fit for purpose.

The original Groundwater Impact Assessment and Amended Groundwater Impact Assessment were both undertaken in accordance with relevant guidelines, including consideration against the minimal impact considerations of the NSW Aquifer Interference Policy.

1.3 The Department of Planning, Housing and Infrastructure request the proponent to include additional monitoring of the shallow aquifer units in an updated Water Management Plan.

As required by Condition 4 of Schedule 5 of PA 08_0184, the approved WMP will be reviewed and updated, if necessary, should the Amended Modification be approved. This will include consideration of additional groundwater monitoring in shallow aquifer units.

3.2 Water Take and Licensing

2.1 The Department of Planning, Housing and Infrastructure request the proponent to ensure sufficient water entitlement is held in a water access licence to account for the maximum predicted take for each water source prior to the occurring.

As discussed in the Amended Groundwater Assessment prepared by Australasian Groundwater and Environmental Consultants (AGE), UCMPL owns 50 units of allocation in the Upper Talbragar River Water Source and 10 units in the Macquarie Oxley Management Zone (which is currently being finalised), and is more than adequate to account for the predicted baseflow reduction and peak take within the management zone to the end of mining in 2032/2033. Post-mining there may be a need for additional licensing to account for the predicted peak in 2113/2123 and 2083/93 respectively, however further model development prior to this time, and a reduction in uncertainty and conservatism in the model, could result in this prediction reducing. Regardless, UCMPL will ensure that sufficient water entitlement is held for this water source prior to the take occurring.

4.0 Mid-Western Regional Council

Council has reviewed the report and would like to advise that there is no formal submission or response in relation to the amendment report.

MWRC's submission is noted.

5.0 Department of Regional NSW – Mining, Exploration and Geoscience (MEG)

MEG considers that the Modification is consistent with the objects of the Mining Act 1992. Furthermore, in relation to clause 2.21 of the State Environmental Planning Policy (Resources and Energy) 2021, the Modification is expected to represent an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

Based on current title information MEG advises that the Proponent holds the appropriate titles as required for planning applications for coal as relating to the Modification and satisfies the requirements of section 380AA.

MEG notes that the Proponent has lodged a mining lease application over Exploration Licence 7542. Mining Lease Application 609 (Act 1992) and MLA630 (Act 1992) will cover the additional area sought as part of the Amendment Modification.

Noted.

MEG requests that the Proponent consider potential resource sterilisation should any future biodiversity offset areas be considered. The Proponent must consult with MEG and any holders of existing mining or exploration authorities that could be potentially affected by the proposed creation of any such biodiversity offsets, prior to creation occurring. This will ensure there is no consequent reduction in access to prospective land for mineral exploration or potential for the sterilisation of mineral and extractive resources.

Advice on the consideration of potential resource sterilisation for biodiversity offset areas is noted.

Should UCMPL consider any future biodiversity offset areas, including Biodiversity Stewardship Agreements in order to resolve credit liabilities associated with the Amended Modification, UCMPL will consider resource sterilisation implications as consult with MEG and any holders of existing mining authorities as required.

MEG estimates the project will generate a lower estimated royalty of about \$196.4 million or \$112 million in Net Present Value (NPV) terms than the Proponent estimates if royalties were calculated based on Office of the Chief Economist (OCE) and Consensus price forecasts over the 8-year period.

The table presented on page 7 of the MEG advice provides royalties estimates using the assumptions and parameters outlined by MEG and is reproduced below. We note however that the annual estimates royalties using the MEG estimate (\$14.0m) should be presented as \$24.5m for consistency with the approach for the Proponent estimate.

Resource parameter	\$m (2021 dollars)
Total royalties received	280.3 (Proponent estimate) 196.4 (MEG estimate)*
Net Present Value (NPV) royalties (7% discount rate, real)	158.8 (Proponent estimate) 112.0 (MEG estimate)*
Annual estimated royalties (average)	35.0 per year over 8 years (Proponent estimate) 14.0 per year over 8 years (MEG estimate)**

* If royalties were calculated based on OCE and Consensus price forecasts over the 8-year period, the total royalties received would be \$196.4 million (\$112.0m NPV)

** UCMPL notes that this should be 24.5 per year over 8 years (\$196.4m over 8 years).

UCMPL notes the differences in calculation method used by MEG in their advice and the calculation method used by UCMPL. The Economic Impact Assessment (EIA) that was prepared for the Amended Modification followed the economic assessment framework set out in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the Guidelines) released by the NSW Government in December 2015 and the accompanying *Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals* (NSW DPE, 2018).

The MEG advice confirms that “MEG is of the view the Amendment Modification is expected to be an efficient use of resources and should provide an appropriate return to the NSW Government.”

6.0 Department of Regional NSW – Resources Regulator

Based on the review of the Ulan Coal Modification 6 - Underground Mining Extension Amendment Report - Final May 2024, the Resources Regulator advises that it has no specific comments regarding mine safety or mine rehabilitation matters in relation to the proposals.

The Resources Regulator advice is noted.

7.0 Biodiversity, Conservation and Science Group (BCS)

3.1 We have reviewed the BDAR and the BAM-C cases and has identified some inconsistencies between ecosystem species.

For example, Table B.1 Ecosystem credit species in Appendix B of the Amended BDAR identifies the following ecosystem species as occurring in PCT 476:

- *dusky woodswallow*
- *glossy black cockatoo*
- *white-throated needletail*
- *turquoise parrot*
- *barking owl*

For comparison, BAM-C case 00040994 for Stage 1B which is identified in the BAM-C case as PCT 476 contains the following ecosystem credits in Tab 4:

- *dusky woodswallow*
- *white-throated needletail*
- *swift parrot*
- *turquoise parrot*

We recommend a full audit of BAM-C cases and the Amended BDAR and is undertaken and all errors detected are updated.

The inconsistencies with predicted ecosystem credit species for PCT 476 identified in the BCS advice are related to errors experienced with the BAM-C calculators when preparing the Biodiversity Development Assessment Report (BDAR). At the time, Umwelt contacted BOS support, however the solutions they provided did not fix the issue. The errors do not result in any material impacts on the calculations or credit outcomes.

Umwelt has undertaken a full review of all BAM-C cases and no other errors were detected. If a solution to these errors is available, the relevant BAM-C case could be updated.

6.1 An independent expert should be engaged to provide advice on the impacts of subsidence on hydrology and groundwater.

It is noted that the IESC and IEAPM have both previously provided independent scientific advice to the Commonwealth DCCEEW and NSW DPHI on the Proposed Modification in relation to impacts to groundwater and surface water.

8.0 References

Airen Consulting Pty Ltd, 2024. Ulan Coal Complex Modification 6 Amendment Greenhouse Gas Assessment.

Australasian Groundwater and Environmental Consultants Pty Ltd, 2022. Report on Ulan Coal Mines Modification 6 (MOD6) Groundwater Impact Assessment. Prepared for Ulan Coal Mine Complex. Project No. G1985G.

Australasian Groundwater and Environmental Consultants Pty Ltd, 2018. Groundwater Impact Assessment for s75W Modification (MOD4), prepared for UCML. Project No. G1844H.

Barnett B, Townley LR, Post V, Evans RE, Hunt RJ, Peeters L, Richardson S, Werner AD, Knapton A and Boronkay A, 2012. *Australian groundwater modelling guidelines*, Waterlines Report Series No. 82, National Water Commission, Canberra.

Doherty J, 2010. PEST – Model independent parameter estimation user manual: 5th edition, Watermark Numerical Computing, Corinda, Australia.

Murray-Darling Basin Commission, 2001. Groundwater Flow Modelling Guideline. Report prepared by Aquaterra.

NSW Department of Planning and Environment, 2023. Dark Sky Planning Guideline.

NSW Department of Planning and Environment, 2018. Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals.

NSW Government, 2015. Guidelines for the economic assessment of mining and coal seam gas proposals.