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Environmental & Social Consultants

ULAN COAL MODIFICATION 6 – UNDERGROUND MINING EXTENSION

Submissions Report

FINAL

August 2023

ULAN COAL MODIFICATION 6 – UNDERGROUND MINING EXTENSION

Submissions Report

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Ulan Coal Mines Pty Limited

Project Director: Kirsty Davies
Project Manager: Kirsty Davies
Report No. 20020/R11
Date: August 2023

Environmental & Social Consultants

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
FINAL	Kirsty Davies	8 August 2023	Kirsty Davies	10 August 2023

Executive Summary

Ulan Coal Mines Pty Limited (UCMPL) was granted its current Project Approval (PA) 08_0184 under the then Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) on 15 November 2010 for the Ulan Coal – Continued Operations Project (UCCO Project). UCMPL is proposing a modification to PA 08_0184 to maximise resource recovery from the existing underground mining operations by mining additional coal within existing mining lease and exploration licence areas. A Modification Report was prepared to assess the environmental and social impacts of the Ulan Coal Modification 6 – Underground Mining Extension (Proposed Modification) and accompanied the modification application prepared under section 4.55 (2) of the EP&A Act.

The Modification Report for the Proposed Modification was placed on public exhibition by the NSW Department of Planning and Environment (DPE) from 18 November 2022 to 15 December 2022.

During public exhibition, 61 submissions were made on the Proposed Modification. This included nine government submissions and 52 community submissions. The 52 submissions received from the community included 36 submissions objecting to the Proposed Modification, and 16 submissions in support. The most frequently raised theme in objecting submissions was perceived impacts relating to climate change and greenhouse gases.

As a result of ongoing mine design, improved understanding of mining and geological conditions and in consideration of responses on the Modification Report (Umwelt, 2022) and further consultation with government agencies, UCMPL has made refinements to the proposed surface infrastructure to support the additional underground mining at the UCC.

As outlined in the Modification Report, UCMPL has sought to avoid and minimise potential impacts on ecological values throughout the Proposed Modification planning process by maximising the use of existing mining facilities and considering the placement of essential infrastructure to seek to minimise disturbance to native vegetation and habitats. In order to further avoid ecological impacts, UCMPL has:

- removed three proposed dewatering bores and associated infrastructure corridors
- removed proposed contingency Ulan Underground ventilation options and associated infrastructure corridors
- refined proposed Ulan West infrastructure access corridors
- refined the proposed access track.

The proposed surface infrastructure changes have reduced the potential direct impact associated with the Proposed Modification to 23 ha, a reduction of 4.4 ha (or approximately 16%).

UCMPL developed conceptual infrastructure layouts which were assessed as part of the Modification Report, however, it is acknowledged that the detailed design including final location of infrastructure is subject to further exploration and detailed mine planning. To retain flexibility in the location of surface infrastructure proposed, the Proposed Modification includes a preferred surface infrastructure footprint with a worst-case option on potential alternative footprints. Under the worst-case assessment, the Proposed Modification has been assessed as potentially having a direct impact on up to 26.1 ha of native vegetation communities, a reduction of 11 ha. This assessment is conservative and the Proposed Modification will not ultimately result in the removal of 26.1 ha of native vegetation.

The Proposed Modification maximises the efficient recovery of a valuable resource by maximising resource utilisation and use of existing infrastructure and workforce, thereby reducing capital costs and minimising environmental impacts compared with recovering this resource by another means.

As identified by the NSW Government's 2020 *Strategic Statement on Coal Exploration and Mining in NSW* (NSW Strategic Statement) coal mining is an important industry for NSW and will continue as such for the next few decades. Coal mining is a significant source of direct and indirect jobs in regional NSW and underpins many local economies. The NSW Strategic Statement acknowledges the need to recognise existing industry investment by continuing to consider responsible applications to extend the life of current coal mines. As an established operation with access to significant coal reserves beyond the term of PA 08_0184, the Proposed Modification fits within the Plan of Action proposed in the NSW Strategic Statement for supporting responsible coal production.

The comprehensive environmental and social impact assessment undertaken for the Proposed Modification found that with the continued implementation of existing management and mitigation measures and the addition of the new measures identified, the Proposed Modification can proceed within acceptable environmental standards, without significantly increasing the impacts of the approved operations.
The economic assessment predicts that the Proposed Modification would provide a net benefit to NSW, estimated to be $292.6 million in net present value (NPV) terms, including both direct and indirect benefits.

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1.0 Introduction

Ulan Coal Mines Pty Limited (UCMPL) was granted its current Project Approval (PA) 08_0184 under the then Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) on 15 November 2010 for the Ulan Coal – Continued Operations Project (UCCO Project). UCMPL is proposing a modification to PA 08_0184 to maximise resource recovery from the existing underground mining operations by mining additional coal within existing mining lease and exploration licence areas. A Modification Report was prepared to assess the environmental and social impacts of the Ulan Coal Modification 6 – Underground Mining Extension (Proposed Modification) and accompanied the modification application prepared under section 4.55 (2) of the EP&A Act.

The Modification Report for the Proposed Modification was placed on public exhibition by the NSW Department of Planning and Environment (DPE) from 18 November 2022 to 15 December 2022.

During public exhibition, 61 submissions were made on the Proposed Modification. This included nine government submissions and 52 community submissions. The 52 submissions received from the community included 36 submissions objecting to the Proposed Modification, and 16 submissions in support. A full analysis of the submissions is provided in **Section 2.0**.

In correspondence dated 20 December 2022, DPE requested UCMPL formally respond to issues raised in the submissions, as required under clause 82 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). This Submissions Report has been prepared by Umwelt Australia Pty Ltd (Umwelt) on behalf of UCMPL in accordance with *the State significant development guidelines – preparing a submissions report* (the Guidelines) (DPE, 2022) to address the key issues raised in the submissions.

It is noted that advice from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) dated 15 March 2023 was also provided. A response to the IESC advice will be provided in a separate report and is not included in the submission numbers outlined in **Section 2.0**.

1.1 Overview of the Proposed Modification

The Ulan Coal Complex (UCC) is located approximately 38 km north-east of Mudgee and 19 km north-east of Gulgong in New South Wales (NSW) (refer to **Figure 1.1**). The UCC is owned by Glencore Coal Pty Limited (Glencore) and operated by UCMPL, a subsidiary of Glencore.

Approved mining operations within the UCC consist of underground mining in the Ulan Underground and Ulan West Underground areas as well as open cut mining, and associated coal handling, processing and transport through to 30 August 2033. The open cut operations are currently in care and maintenance.

In addition to proposing to mine additional resources within existing mining lease areas, UCMPL has determined that there is a valuable mineable resource within Exploration Licence (EL) 7542 and is proposing to access this coal resource by extending the currently approved longwall panels into these areas.

The Proposed Modification will maximise resource recovery within the existing mining lease and exploration licence areas by extending currently approved longwall panels into these areas to enable the extraction of an additional approximately 25 million tonnes (Mt) of product coal. The Proposed Modification will not change the current approved coal extraction rate of up to 20 Mt per annum (Mtpa) of product coal.

The Proposed Modification will extend the life of the approved UCC operation by approximately two years allowing mining to continue until August 2035. The UCC will continue to utilise the existing approved mine facilities, including the Coal Handling and Preparation Plant (CHPP) and train loading facilities.

To allow for the proposed extension of the underground mining area, the Proposed Modification includes changes to the surface infrastructure associated with underground operations, including ventilation, power and dewatering infrastructure.

Figure 1.2 illustrates the approved UCC operations and **Figure 1.3** shows the Proposed Modification in relation to the currently approved mining operations at UCC. The currently approved Project Area is proposed to be amended to include EL 7542. The Proposed Modification comprises:

- extension of Ulan Underground longwall (LW) panels LWW9 to LWW11 to the west
- widening of Ulan Underground LWW11 by approximately 30 metres
- extension of Ulan West LW9 to LW12 to the north.

The Proposed Modification also proposes some minor changes to surface infrastructure to support underground mining activities including provision of:

- three ventilation shafts and associated infrastructure corridors
- five dewatering bores and associated infrastructure corridors
- an alternate access track
- an infrastructure corridor and service borehole (to deliver gravel and other construction materials and to provide access and power to the underground mine) to the south-west of Ulan West
- other associated infrastructure required to service the approved and proposed underground mining operations.

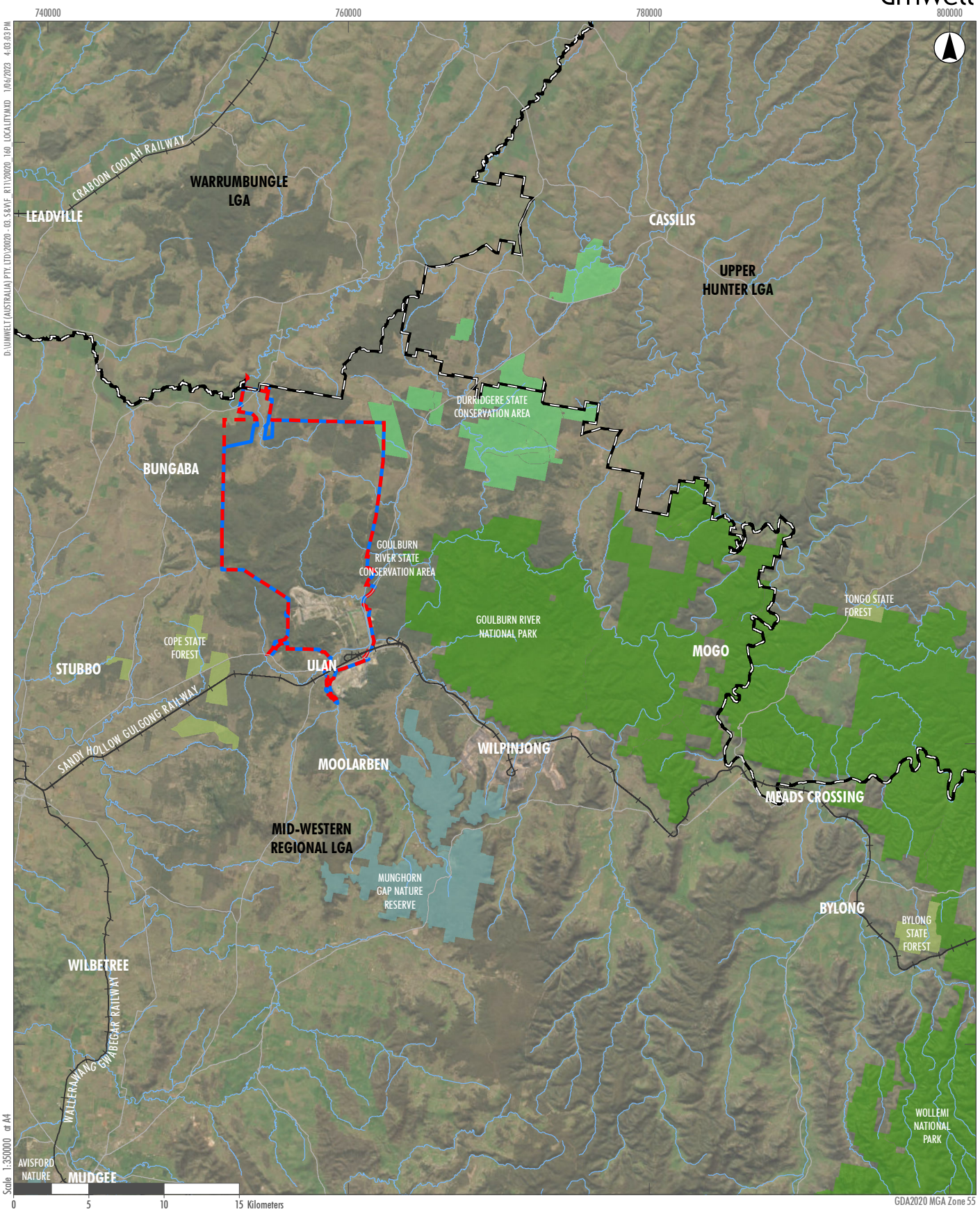
In response to submissions received during the exhibition period of the Modification Report, UCMPL has made some changes to the proposed surface infrastructure which are discussed in **Section 3.2**.

The Proposed Modification has been designed through a multi-disciplinary social and environmental risk-based approach aimed at maximising resource extraction efficiency and optimising the use of existing site infrastructure, while seeking to minimise impacts on the environment and community. The key learnings from the long history of mining operations at the site, the stakeholder engagement program, and from environmental and social impact assessments, have all been considered in the design of the Proposed Modification.

A comparison between the approved development under PA 08_0184 and the Proposed Modification is provided in **Table 1.1**.

Table 1.1 Comparison of PA 08_184 and the Proposed Modification

Key Project Component	Approved Development (PA 08_184)	Proposed Modification
Mine life	Mining operations until 30 August 2033	Extension of life of mine until 30 August 2035 (an additional two years)
Limits of extraction	20 million tonnes of coal per annum (including maximum of 4.1 Mtpa ROM from Open Cut)	No change to existing extraction rate Additional approximately 25 Mt of product coal from the Proposed Modification
Operating hours	24 hours per day, 7 days per week	No change
Project boundary	As per PA 08_0184 (refer to **Figure 1.3**)	Extension of Project Approval Boundary to include the northern part of EL 7542 (refer to **Figure 1.3**)
Mine plan	As per PA 08_0184 (refer to **Figure 1.3**)	Extension of Ulan Underground LWW9 to LWW11, and Ulan West LW9 to LW12 Widening of Ulan Underground LWW11 Refer to **Figure 1.3**
Mining method	Retreat longwall method	No change
Surface infrastructure	As per PA 08_0184	Minor additions and changes to infrastructure including dewatering bores, ventilation shafts and associated infrastructure to accommodate the proposed mine plan
Coal Handling and Preparation Plant	As per PA 08_0184 (refer to Figure 1.2)	No change
Coal transportation	All coal transported from the site by rail. No more than 10 laden trains leave the site each day	No change
Workforce numbers	Approximately 930 people (UCC)	No change



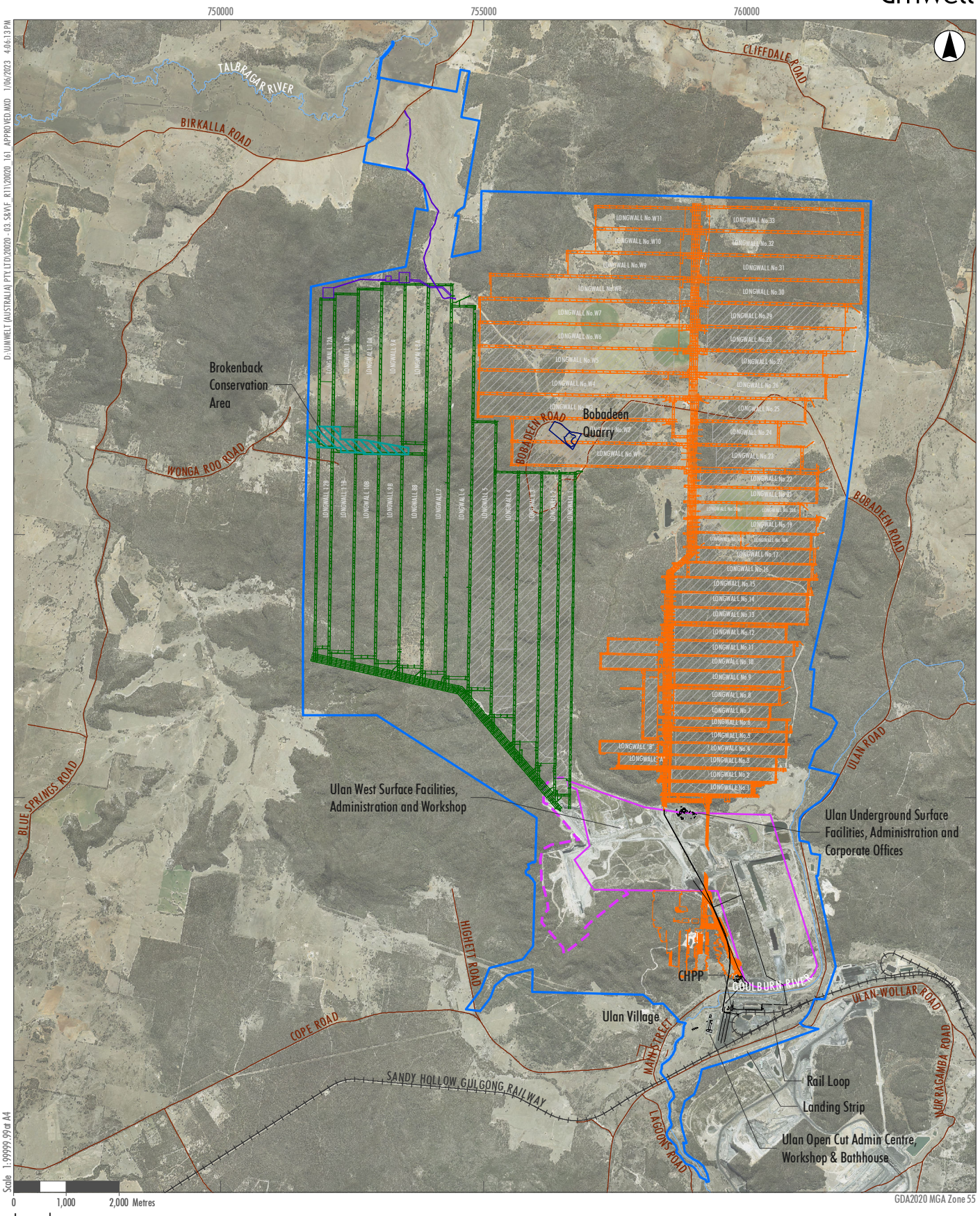
Legend

- Project Approval Boundary
- Proposed Project Approval Boundary
- Local Government Area (LGA)
- Road
- Railway
- Creek/River
- State Forest
- National Park
- Nature Reserve
- State Conservation Area

FIGURE 1.1

Locality Plan

Image Source: ESRI Basemap Data source: Glencore (2020); NSW DFSI (2020)



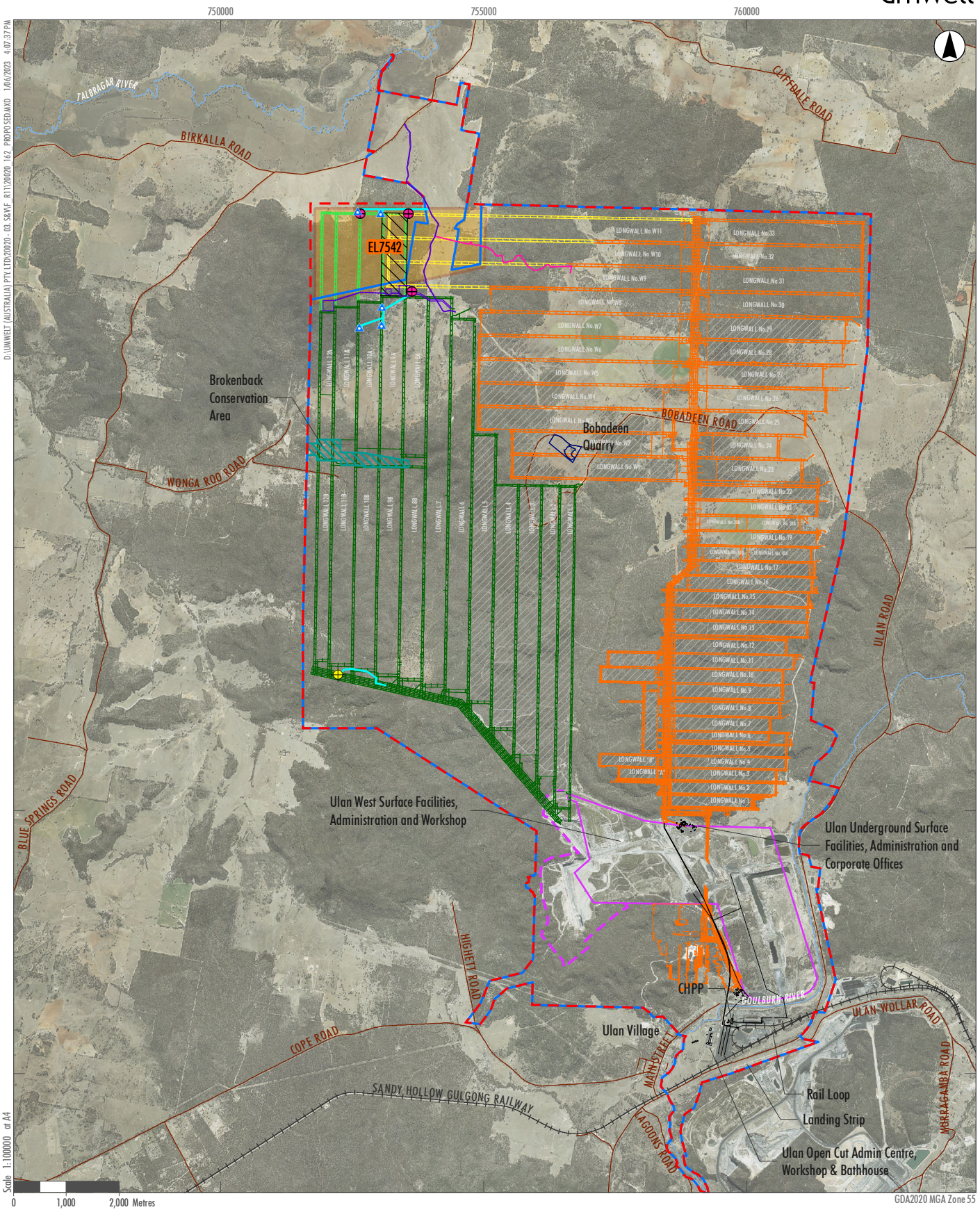
Legend

- Project Approval Boundary
- Brokenback Conservation Area
- Bobadeen Quarry
- Roads
- Railway
- Major Watercourses
- Approved Infrastructure related to Mod 6
- Approved Ulan Underground Mine Plan
- Approved Ulan West Mine Plan
- Previously Mined
- Previous Ulan Open Cut Area
- Approved Ulan Open Cut Extension

FIGURE 1.2

Approved Operations

Image Source: Glencore (2018) Data source: Glencore (2020); NSW DFSI (2020)



Legend

- Project Approval Boundary
- Proposed Project Approval Boundary
- Brokenback Conservation Area
- Bobadeen Quarry
- Exploration Lease - EL7542
- Roads
- Railway
- Major Watercourses
- Approved Infrastructure related to Mod 6
- Approved Ulan Underground Mine Plan
- Approved Ulan West Mine Plan
- Previously Mined
- Previous Ulan Open Cut Area
- Approved Ulan Open Cut Extension
- Proposed Borehole
- Proposed Vent Shaft
- Proposed Dewatering Bores
- Proposed Infrastructure
- Proposed Access Track Corridor
- Proposed Ulan Underground Mine Plan Modification
- Proposed Ulan West Underground Mine Plan Modification
- Longwall Option Area

FIGURE 1.3

Proposed Modification

Image Source: Glencore (2018) Data source: Glencore (2020); NSW DFSI (2020)

2.0 Analysis of Submissions

2.1 Breakdown of Submissions

The Modification Report was placed on public exhibition from 18 November 2022 to 15 December 2022. During the public exhibition period 61 submissions were made on the Proposed Modification. **Table 2.1** provides a breakdown of submissions.

It is noted that two of the submissions received for the Proposed Modification were in relation to a proposed development at a neighbouring coal mining operation which was also on public exhibition at the same time. These submissions have been included in the numbers provided in **Table 2.1** but will not be addressed further in this Submissions Report.

Also of note, seven of the submissions (from both individuals and community stakeholder groups) showed significant similarities in both format and wording.

Table 2.1 Submission Breakdown

Category		Number of Submissions
Government	State government agencies/public authorities	8
	Local government (Councils)	1
Community	Stakeholder groups	14
	Individuals	38*
Total		**61**

* *Includes two submissions not related to the Proposed Modification. This report will consider 36 individual community submissions.*

A Submissions Register is provided in **Appendix 1**.

2.1.1 Government Submissions

As outlined in **Table 2.1**, eight government agency submissions and one Council submission were received:

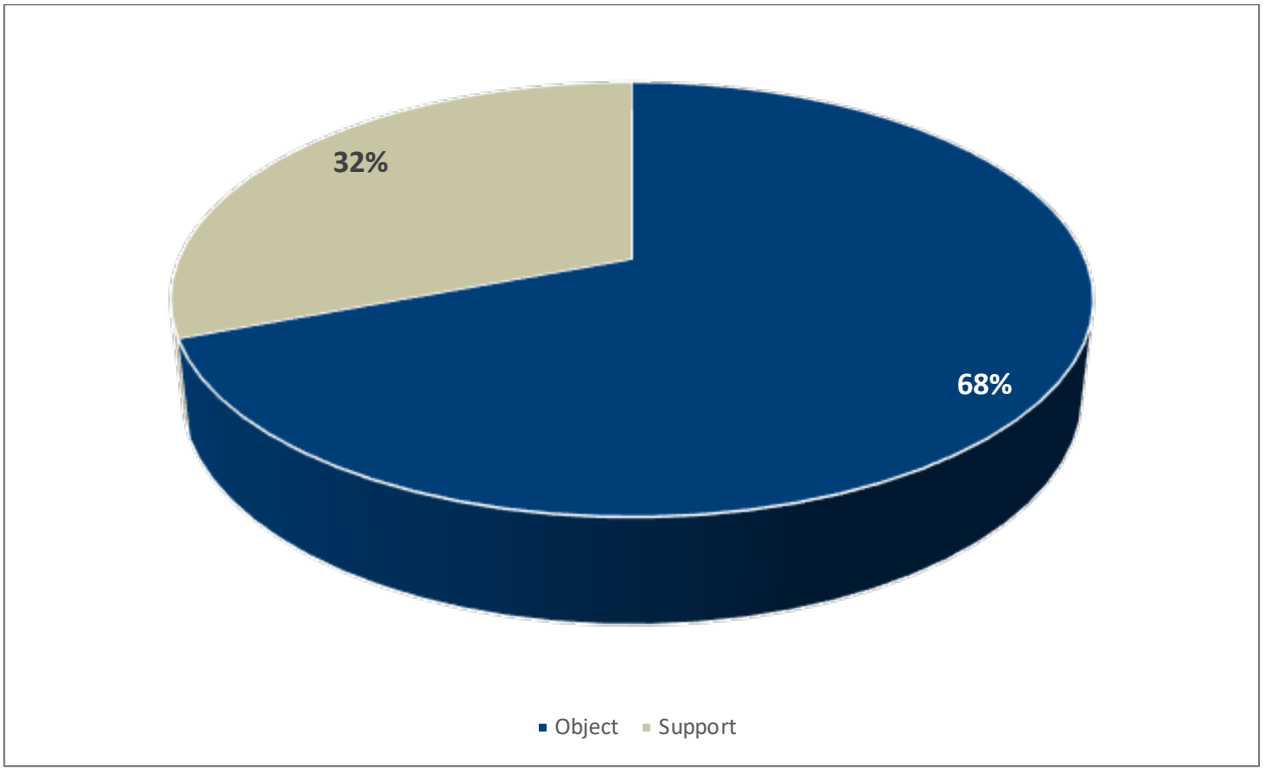
- Department of Planning and Environment – Crown Lands (DPE Crown Lands)
- Department of Planning and Environment – Water (DPE Water)
- Department of Planning and Environment – Biodiversity, Conservation and Science Directorate (BCS)
- Department of Regional NSW including comments from both Mining, Exploration and Geoscience and the Resources Regulator
- Department of Primary Industries – Agriculture (DPI Agriculture)
- NSW Environment Protection Authority (EPA)
- Transport for NSW (TfNSW)

- Heritage NSW
- Mid-Western Regional Council (MWRC).

None of the agencies objected to the Proposed Modification and only two (DPE Water and BCS) requested further information or clarification of any aspects of the assessment provided in the Modification Report. The content of these submissions is discussed further in **Section 4.0**.

2.1.2 Community and Organisation Submissions

Of the 50 submissions received from the community (including individuals and stakeholder groups), 16 (32%) were in support of the Proposed Modification and 34 (68%) were objections (refer to **Graph 2.1**).



Graph 2.1 Percentage of Supporting and Objecting Community Submissions

The breakdown of the 50 submissions received from the community and organisations/interest groups is provided in **Table 2.2**.

Table 2.2 Breakdown of Community and Organisation/Interest Group Submissions

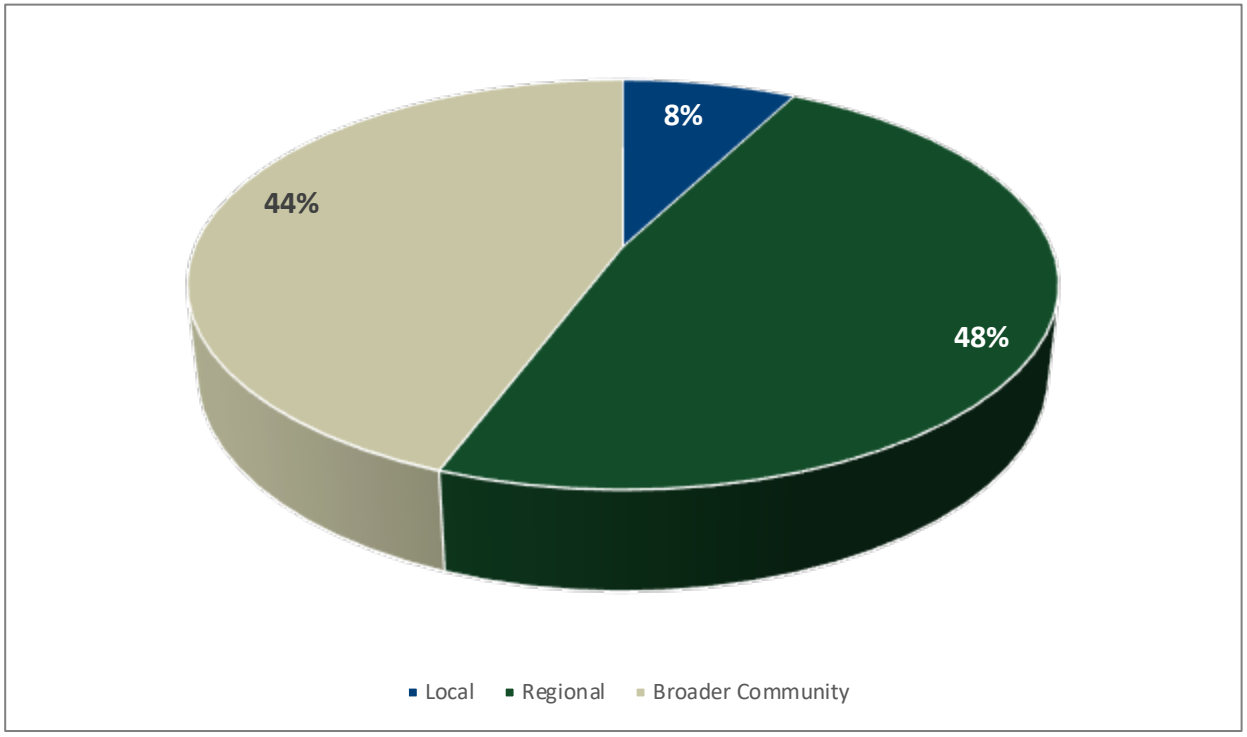
Group	Objections	Supports
Community	21 (42%)	15 (30%)
Organisations/Interest Groups	13 (26%)	1 (2%)
Total	**34 (68%)**	**16 (32%)**

Submissions were analysed based on proximity to the Proposed Modification to determine the level of interest across the following three categories:

- local (less than 5 km from the Proposed Modification)
- regional (between approximately 5–100 km from the Proposed Modification)
- broader community (greater than approximately 100 km from the Proposed Modification).

It is noted that some residences in the suburbs listed as local may be greater than 5 km from the Project Area. The analysis by suburb is therefore conservative in its approach as further interrogation is not possible with the data available.

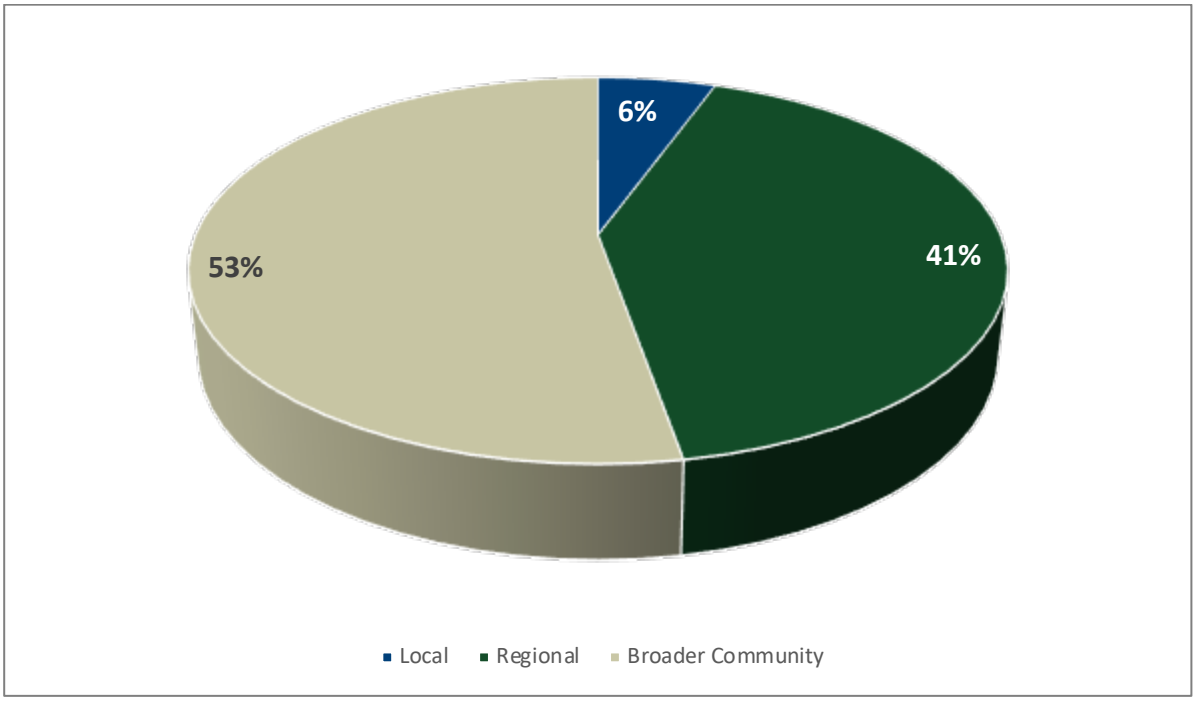
Of the community and organisation/interest group submissions received (including objections and supports), 4 (8%) were received from the local area, 24 (48%) from the regional area and 22 (44%) from the broader community (refer to **Graph 2.2**).



Graph 2.2 Percentage of Community and Organisation Submissions by Area

2.1.2.1 Objecting Submissions

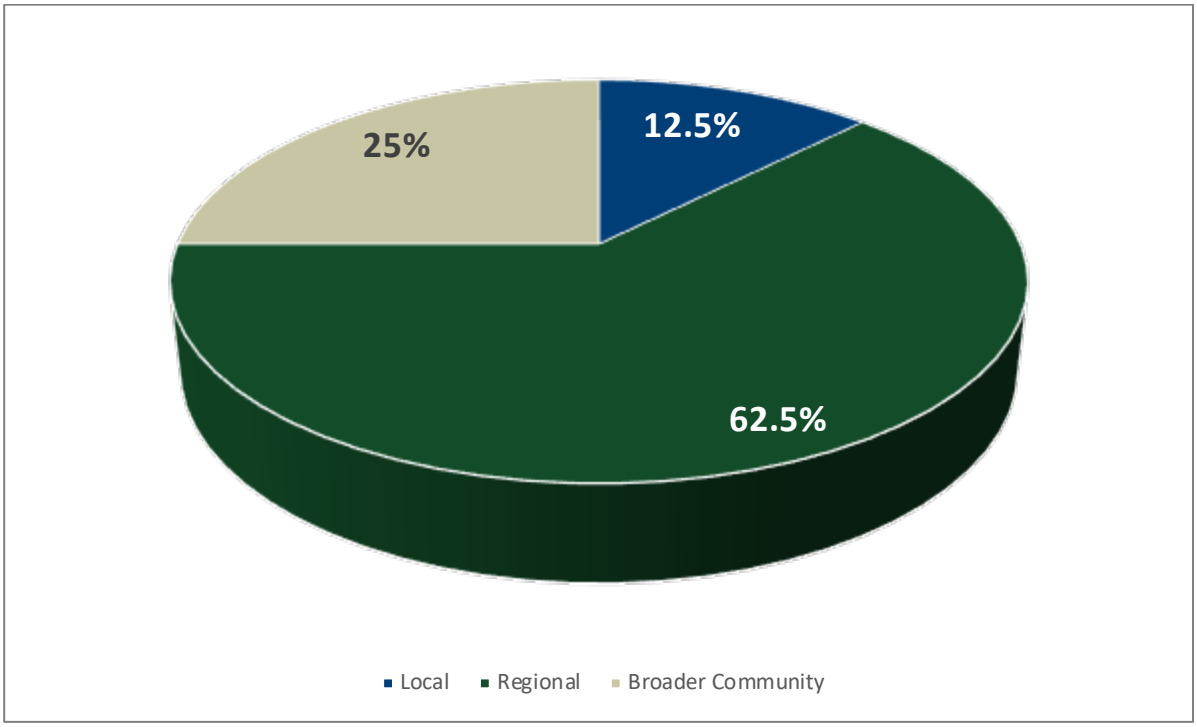
As outlined above, a total of 34 submissions objected to the Proposed Modification, including 21 community members and 13 organisations/interest groups. Based on the analysis, two (6%) objections were received from the local area (within approximately 5 km), 14 (41%) from the regional area (between approximately 5 km and 100 km) and 18 (53%) from the broader community (greater than approximately 100 km) (refer to **Graph 2.3**).



Graph 2.3 Percentage of Objecting Community and Organisation Submissions by Area

2.1.2.2 Supporting Submissions

A total of 16 submissions were received that support the Proposed Modification, including 15 community members and 1 organisation. Based on the analysis, two (12.5%) supporting submissions were received from the local area (within approximately 5 km), 10 (62.5%) from the regional area (between approximately 5 km and 100 km) and four (25%) from the broader community (greater than approximately 100 km) (refer to **Graph 2.4**).



Graph 2.4 Percentage of Supporting Community and Organisation Submissions by Area

2.2 Categorising Issues

A content analysis was undertaken on all community submissions to gain an understanding of the key issues raised in relation to the Proposed Modification. Objections and supporting submissions were analysed separately, as the themes within the submissions were distinct.

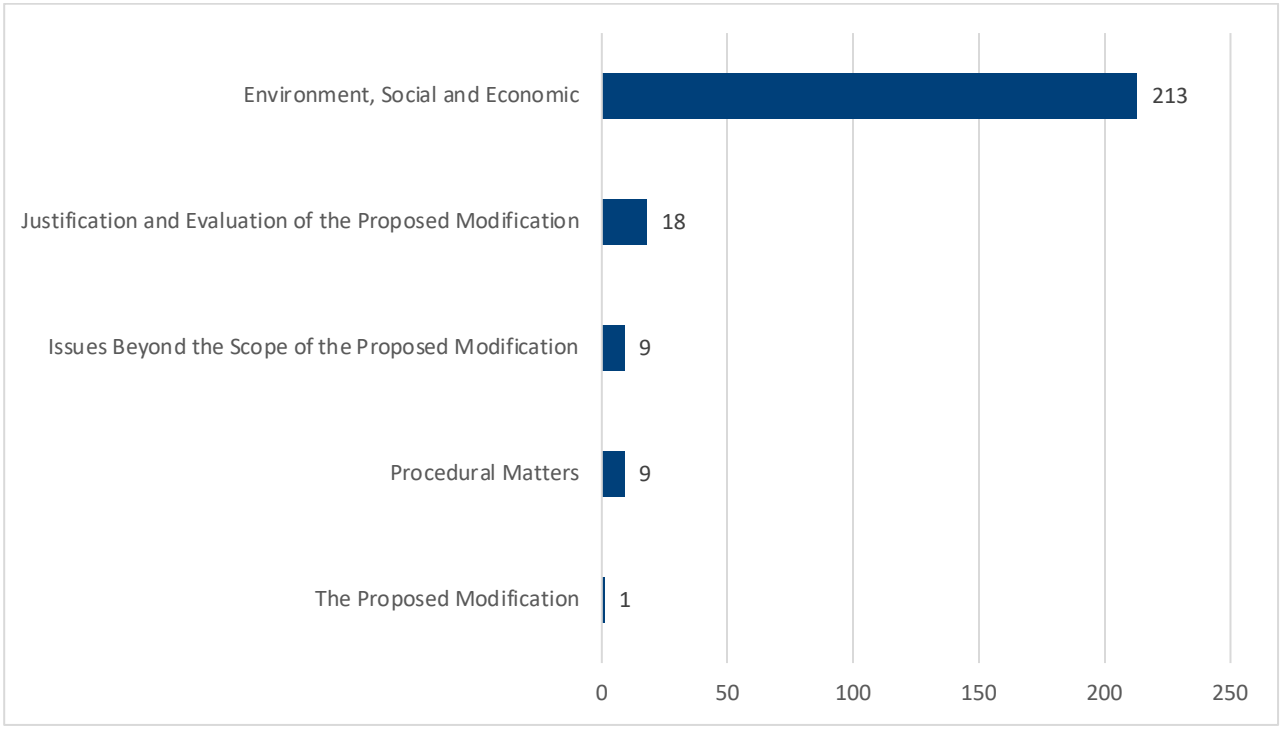
In accordance with the Guidelines (DPIE, 2022), issues have been categorised into the following broad groups:

- the Proposed Modification (e.g. the site, the project area, the physical layout and design, key uses and activities, timing)
- procedural matters (e.g. level or quality of engagement, compliance with the SEARs, identification of relevant statutory requirements)
- the economic, environmental and social impacts of the Proposed Modification (e.g. amenity, air, biodiversity, heritage)
- the justification and evaluation of the Proposed Modification as a whole (e.g. consistency with Government plans, policies or guidelines)
- issues that are beyond the scope of the Proposed Modification (e.g. broader policy issues) or not relevant to the Proposed Modification.

These broad issues categories were then divided into themes and sub-themes where relevant to provide greater definition of the issues raised. Further details of the categorisation of issues are provided in the following sections.

2.2.1 Objecting Submissions

Environmental, social and economic impacts of the Proposed Modification were the most frequently raised category of issues in the objecting submissions received (refer to **Graph 2.5**). Issues with the justification of the Proposed Modification were the second most frequently raised category of issues, followed by issues beyond the scope of the Proposed Modification, procedural matters and design of the Proposed Modification. It should be noted that many submissions raised multiple issues categories and multiple themes and sub-themes within each issue category.



Graph 2.5 Categorisation of Objecting Submissions

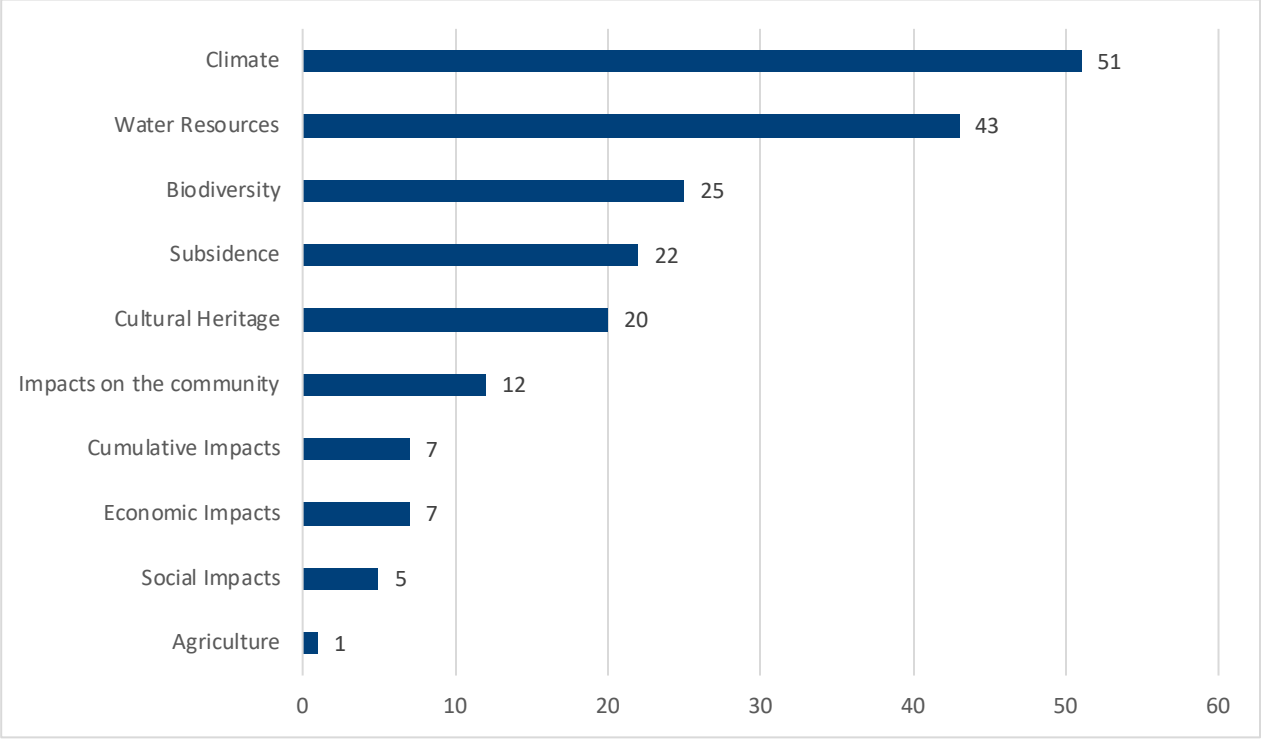
Environment, Social and Economic

There were 10 key themes to the environmental, social and economic issues raised in the objecting submissions, including:

- climate change and greenhouse gases
- impacts on water resources, including The Drip
- biodiversity
- subsidence
- cultural heritage

- impacts on the community, including noise, traffic/transport, public health and safety
- cumulative impacts
- economic
- social
- agriculture.

The most frequently raised theme was impacts relating to climate change and greenhouse gases (refer to **Graph 2.6**).



Graph 2.6 Environment, Social and Economic Issue Themes

Impacts to water resources were the second most frequently raised theme (refer to **Graph 2.6**), with concerns centred around the loss of water resources, access to water resources and The Drip.

Justification and Evaluation of the Proposed Modification

There were 14 submissions that raised concerns about the justification of the Proposed Modification, while two submissions were received that stated a general objection to the Proposed Modification however stated no specific issues or reasons for the objection. These submissions were classified as objections on the justification and evaluation of the Proposed Modification.

Responses to objections raised in relation to the justification and evaluation of the Revised Project are addressed in **Section 5.2**.

Issues Beyond the Scope of the Proposed Modification

This category includes broader policy issues or issues that are not directly related to the merits of the Proposed Modification. The main theme raised under this category was in relation to the proponent's reputation (four submissions) and current operations (three submissions).

Responses to objections raised in relation to issues beyond the scope of the Proposed Modification are addressed in **Section 5.3**.

Procedural Matters

The key issue raised in relation to procedural matters was:

- compliance with Government policy, including renewable energy zones (REZs) (four submissions)
- adequacy of assessments (three submissions)
- the planning process (two submissions).

Responses to objections raised in relation to procedural matters are addressed in **Section 5.4**.

The Proposed Modification

One objection related to the project design of the Proposed Modification in terms of the location of the additional underground mining area. A response to the objection raised in relation to the Proposed Modification is addressed in **Section 5.5**.

3.0 Actions Taken Since Exhibition

3.1 Ongoing Stakeholder Engagement

UCMPL has undertaken ongoing consultation with DPE and BCS in relation to the Proposed Modification and BCS's comments (refer to **Section 4.3**). Key consultation is outlined in **Table 3.1**.

Table 3.1 Consultation Following Exhibition of the Modification Report

Agency	Date	Topic
DPE / BCS	1 March 2023	Discussion in relation to advice from BCS
DPE	15 March 2023	Discussion in relation to submissions received and advice from BCS
BCS	16 March 2023	Meeting with Umwelt Ecologists to discuss BCS advice
DPE	12 April 2023	Meeting to discuss potential changes to infrastructure layout for the Proposed Modification
DPE	26 April 2023	Meeting to discuss potential changes to infrastructure layout for the Proposed Modification
DPE / BCS	8 May 2023	Meeting to finalise agreed approach for updated BDAR assessment approach

3.2 Project Changes

As a result of ongoing mine design, improved understanding of mining and geological conditions and in consideration of responses on the Modification Report (Umwelt, 2022), UCMPL has made refinements to the proposed surface infrastructure to support the additional underground mining at the UCC.

As outlined in the Modification Report, UCMPL has sought to avoid and minimise potential impacts on ecological values throughout the Proposed Modification planning process by maximising the use of existing mining facilities and considering the placement of essential infrastructure to seek to minimise disturbance to native vegetation and habitats. Areas proposed to be directly impacted for surface infrastructure have been sited to limit disturbance as far as practicable via use of existing disturbed or cleared areas where they exist. This involved siting proposed surface infrastructure based on the findings of ecological and other field assessment work.

In order to further avoid ecological impacts, UCMPL has:

- removed three proposed dewatering bores and associated infrastructure corridors
- removed proposed contingency Ulan Underground ventilation options and associated infrastructure corridors
- refined proposed Ulan West infrastructure access corridors
- refined the proposed access track.

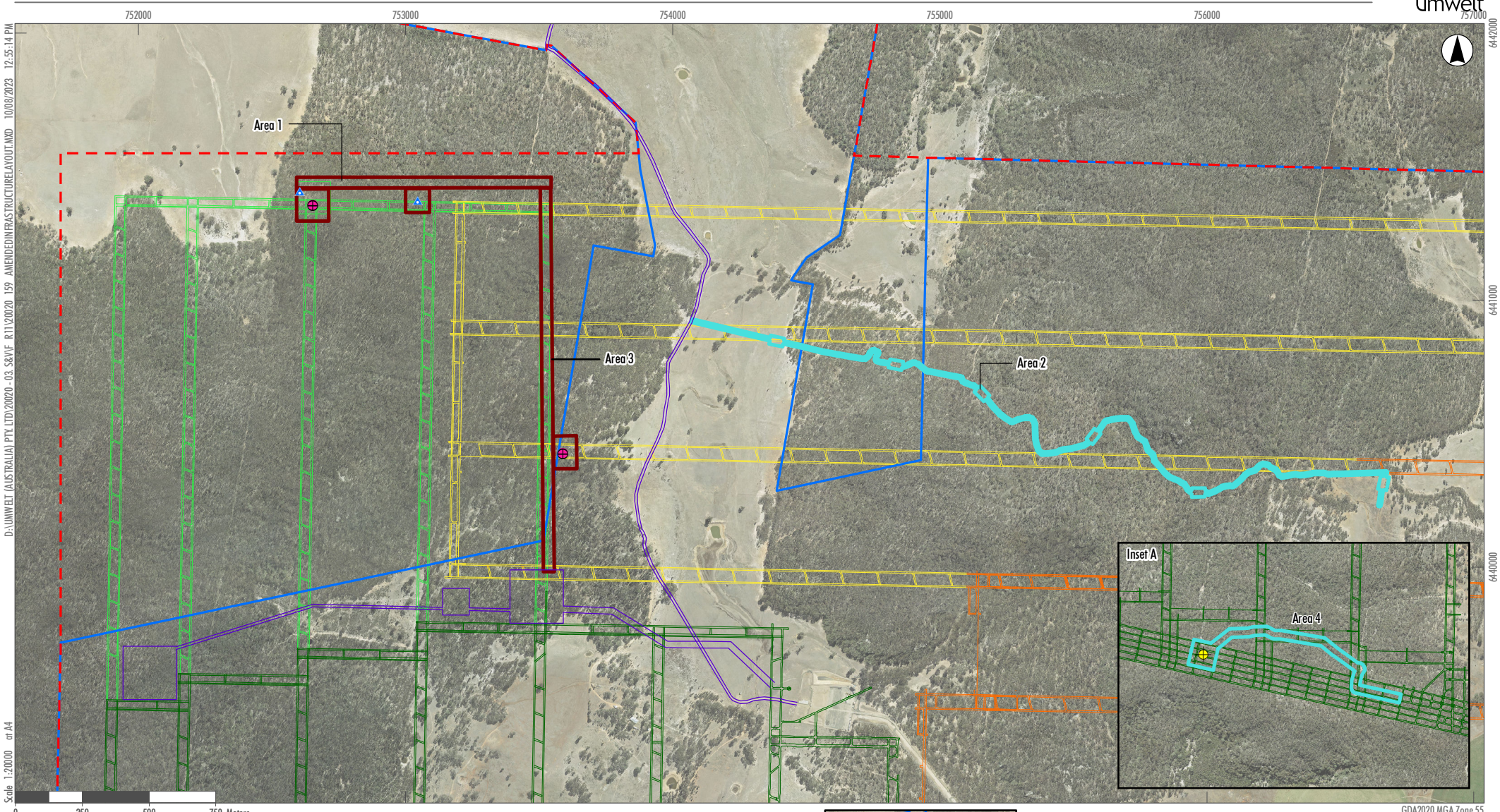
The proposed surface infrastructure changes have reduced the potential direct impact associated with the Proposed Modification to 23 ha, a reduction of 4.4 ha (or approximately 16%). **Figure 3.1** shows the revised surface infrastructure layout proposed for the Proposed Modification.

UCMPL developed conceptual infrastructure layouts which were assessed as part of the Modification Report, however, it is acknowledged that the detailed design including final location of infrastructure is subject to further exploration and detailed mine planning. To retain flexibility in the location of surface infrastructure proposed, a maximum parameters assessment was also completed to accommodate the worst-case potential impacts as part of the biodiversity assessment. In addition to the refinements of the proposed surface infrastructure outlined above, UCMPL has sought to refine the maximum impact areas associated with the Proposed Modification.

The Proposed Modification includes a preferred surface infrastructure footprint (as shown on **Figure 3.1**) with a worst-case option on potential alternative footprints (refer to **Figure 3.2**). The Biodiversity Development Assessment Report (BDAR) has been amended to consider the changes to the proposed surface infrastructure layouts and amended approach to alternate footprints (refer to **Section 3.3**). Under the worst-case assessment, the Proposed Modification has been assessed as potentially having a direct impact of up to 26.1 ha of native vegetation communities, a reduction of 11 ha. This assessment is conservative and the Proposed Modification will not ultimately result in the removal of 26.1 ha of native vegetation.

The Proposed Modification now comprises:

- extension of Ulan Underground panels LWW9 to LWW11 to the west
- widening of Ulan Underground LWW11 by approximately 30 metres
- extension of Ulan West LW9 to LW12 to the north
- minor changes to surface infrastructure to support underground mining activities, including provision of the following additional infrastructure items:
    - three ventilation shafts and associated infrastructure corridors
    - two dewatering bores and associated infrastructure corridors
    - an alternate access track
    - an infrastructure corridor and service borehole (to deliver gravel and other construction materials, and to provide access and power to the underground mine) to the south-west of Ulan West
    - other associated infrastructure required to service the approved and proposed underground mining operations.



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Legend

- Project Approval Boundary
- Proposed Project Approval Boundary
- Proposed Infrastructure
- Indicative Footprint of Proposed Infrastructure - Flexibility Required
- Approved Infrastructure related to Mod 6
- Approved Ulan West Mine Plan
- Approved Ulan Underground Mine Plan
- Proposed Ulan Underground Mine Plan Modification
- Proposed Ulan West Underground Mine Plan Modification
- Proposed Borehole
- Proposed Vent Shaft
- Proposed Dewatering Bores

FIGURE 3.1

Amended Infrastructure Layout

Image Source: Glencore (2018) Data source: Glencore (2023); NSW DFSI (2022)

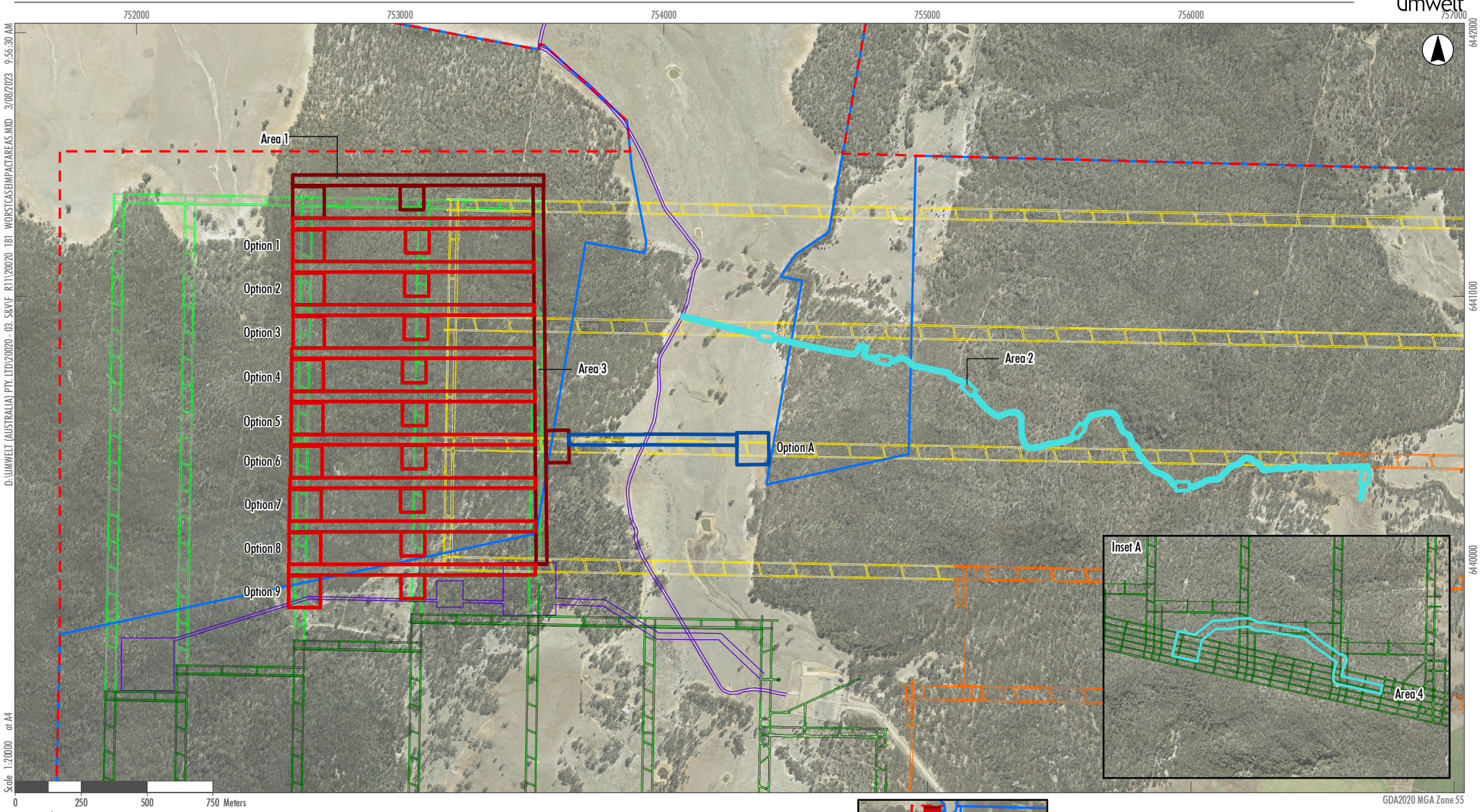


FIGURE 3.2

Worst Case Impact Area (Contingency Footprints)

Image Source: Glencore (2018) Data source: Glencore (2023); NSW DFSI (2022)

3.3 Further Assessment

The changes to the surface infrastructure associated with the Proposed Modification, as outlined in **Section 3.2**, have been considered in an amended BDAR (refer to **Appendix 2**). The amended BDAR also includes revisions to address the BCS comments on the Proposed Modification (refer to **Section 4.3**).

The proposed changes to the surface infrastructure do not have a material change to other assessments included in the Modification Report (Umwelt, 2022).

Additional ecological survey was also undertaken between 15 and 17 May 2023. Due to the large scale of the area, and the lack of a known final footprint, the additional survey aimed to further achieve representative plot coverage as well as addressing as many survey requirements of target species credit species as possible. The additional survey has been included in the amended BDAR (refer to **Appendix 2**).

4.0 Response to Agency Submissions

Government agencies make submissions relating to their areas of responsibility and typically deal with technical matters as well as matters that require consideration by the consent authority or to be addressed by conditions, should development consent be granted.

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

4.1 Department of Planning and Environment – Crown Lands

For mining operations involving Crown land or Crown Roads, the following requirements apply:

1. *All Crown Land and Crown Roads within a Mining Lease (with surface rights), subject to mining or mining related activity, must be subject to a Compensation Agreement issued under Section 265 of the Mining Act 1992, to be agreed and executed prior to any mining activity taking place. The Compensation Agreement may include conditions requiring the Mining Lease Holder to purchase Crown land impacted on by mining activity.*
2. *All Crown Land and Crown Roads located within an Exploration Licence, subject to exploration activity, must be subject to an Access Arrangement issued under Section 141 of the Mining Act 1992, to be agreed and executed prior to any exploration activity taking place.*
3. *All Crown Land and Crown Roads within a Mining Lease (with sub-surface rights only) must be subject to a Section 81 Consent under the Mining Act 1992 where surface activities are proposed, to be agreed and executed prior to any surface activity taking place.*
4. *All Crown Roads within a Mining Lease or Exploration Licence must be subject to a works consent approval under s138 and or s71 of the Roads Act 1993 where exploration, mining or mining related activity impact on these roads.*

The legislative requirements for Crown Land and Crown Roads are noted. UCMPL has an existing Access Arrangement for exploration within EL 7542 in place. Should the Proposed Modification be approved, UCMPL will consult with DPE Crown Lands to confirm any Compensation Agreements, Access Arrangements or Consent required, prior to the commencement of mining and/or surface infrastructure activities.

4.2 Department of Planning and Environment – Water

1.0 Water Entitlements

1.1 Recommendation – Prior to Determination

That the proponent:

- *confirm water [the] requirements for the project including the modification. This should include groundwater inflows and any water take to meet site water demand, and*
- *demonstrate entitlements can be held to account for all water take from both the Sydney Basin MDB (Other) Management Zone and the Sydney Basin MDB (Macquarie Oxley) Management Zone.*

1.2 Recommendation – Post Approval

That the proponent ensure:

- *sufficient water entitlement is held in water access licence/s to account for the maximum predicted take for each water source prior to take occurring, and*
- *note that monitoring bore licences are issued under the Water Act 1912, rather than the Water Management Act 2000.*

1.3 Explanation

The water balance report does not provide a detailed and consolidated water balance. The water balance provided suggests there will be a notable increase in groundwater inflows as a result of the proposed modification but does not identify the volume changes over time by water source or the water access licences which will be used to account for take from those water sources.

The construction and decommissioning of dewatering and service boreholes should be undertaken in accordance with the Minimum Construction Requirements for Water Bores in Australia.

Appendix 3 contains a letter report from Australasian Groundwater and Environmental Consultants (AGE) which provides additional information in direct response to parts 1.0 and 3.0 of the DPE Water submission.

The Groundwater Impact Assessment (GIA) (AGE 2022a) which was included as Appendix 8 of the Modification Report, included the estimated peak water take for licensing purposes. In response to the DPE Water request, Attachment A of **Appendix 3** provides the predicted future annual take for the Proposed Modification from all water sources until the end of mining.

As discussed in Section 8.1.1 of the GIA, modelling of the Proposed Modification indicates that the NSW Murray Darling Basin Porous Rock Groundwater Sources 2020 – Sydney Basin MDB (Other) Management Zone peak inflow is predicted to increase to 8,339 ML/year (2026/27). The current approved peak is 5,604 ML/year (which also occurs in 2026/27). UCMPL currently holds licences for 6,950 units of water allocation in this source, meaning the licensed volume is currently 8,687.5 ML/year and exceeds the predicted peak take.

The predicted peak take within the WSP NSW Murray Darling Basin Porous Rock Groundwater Sources Order 2020 – Sydney Basin MDB – Macquarie-Oxley Management Zone Source is 8.51 ML during mining and 35.2 ML post mining. UCMPL is currently in the process of acquiring the licences within this water source.

The legislative requirements for the issuing of monitoring bore licences are noted. Should the Proposed Modification be approved, UCMPL will hold sufficient water entitlement in Water Access Licences to account for the maximum predicted take for each water source, prior to take occurring.

UCMPL confirms that the construction and decommissioning of dewatering and service boreholes will be undertaken in accordance with the most recent edition of the *Minimum Construction Requirements for Water Bores in Australia* (National Uniform Drillers Licensing Committee) and included in the Water Management Plan.

2.0 Watercourse Impacts

2.1 Recommendation – Prior to Determination

That the proponent confirm:

- *the requirement for waterway crossings for access track and infrastructure corridors and*
- *consistency with the guidelines for controlled activities on waterfront land and the minimum construction requirements for water bores in Australia.*

2.2 Recommendation – Post Approval

That the proponent ensures:

- *subsidence impacts to watercourses are remediated to ensure stability and natural ecological functioning and to minimise impacts resulting from changes in flood behaviour*
- *any works within waterfront land are in accordance with the guidelines for controlled activities on waterfront land.*

2.3 Explanation

The modification report does not identify potential watercourse crossings which appear to be required for the alternate access track and infrastructure corridors associated with dewatering bores. Any such works should be consistent with the Guidelines for Controlled Activities on Waterfront Land.

Mitigation or remediation measures employed to reduce erosion risks in Mona Creek caused by a change in flood velocities as a result of subsidence should show due consideration of the Guidelines for Controlled Activities on Waterfront Land.

Appendix 4 provides additional information in response to part 2.0 of the DPE Water submission.

The Proposed Modification includes the requirement for additional surface infrastructure to support mining activities, including access tracks, dewatering bores and ventilation shafts. This is consistent with the currently approved surface infrastructure and occurs in the same catchment area and under the same land uses/conditions. Some of this infrastructure lies within protected lands and protected waters (i.e. waterfront land), and also includes watercourse crossings. Although UCMPL is exempt from requiring Controlled Activity Approvals (CAA) for these works, UCMPL will undertake any works within waterfront land in accordance with the CAA guidelines.

For all surface disturbance works UCMPL operates under the requirements of the Ulan Coal Erosion and Sediment Control Plan (ESCP) to manage runoff, water segregation, scouring, etc. The ESCP forms part of the Water Management Plan (WMP) and has been prepared to meet the requirements of PA 08_0184 and Environment Protection Licence (EPL) 394. The management and construction of the proposed surface infrastructure will be undertaken using the same methods and controls as are currently in place and specified in the ESCP. For further detail on these controls refer to **Appendix 4**.

The Surface Water and Groundwater Response Plan, which also forms part of the WMP, outlines the response and investigation procedures which are to be implemented in the event of any adverse impacts or potential impacts on the surrounding surface water and groundwater environment. This plan addresses subsidence related impacts on surface water and groundwater resulting from UCC operations.

3.0 Groundwater Impacts

3.1 Recommendation – Prior to Determination

That the proponent:

- *provide up-to-date water level and water quality monitoring data for the sites already provided and for the monitoring bore PZ10A. Data should be presented up to and including the most recent monitoring rounds completed prior to November 2022,*
- *provide comment on up-to-date observations in monitoring bores if/where drawdown has exceeded previously modelled predictions, including how this has been accounted for when preparing the Modification Report, and*
- *demonstrate through reference to uncertainty analysis, or otherwise, that the numerical modelling remains valid for the most recently available monitoring data.*

3.2 Recommendation – Post Approval

That the proponent updates the water management plan to include:

- *sufficient monitoring and mitigation to identify and ensure appropriate response to any impacts in excess of modelled predictions presented during the pre-approval phase, with respect to the objectives and requirements of the NSW Aquifer Interference Policy, and*
- *make-good provisions and monitoring for all water supply bores impacted by more than 2 m drawdown by the activities, including those predicted to be impacted during the post-mining phase.*

3.3 Explanation

The Modification Report and the recent annual report for the site seem to indicate different impact levels. DPE Water recommends that the latest observations should be provided to enable a more representative estimation of future impacts. As such, up-to-date monitoring data, and additional discussion regarding model calibration is required before DPE Water can be satisfied the project could operate within the legal framework of the Water Management Act 2000 and the 'minimal impact considerations' of the NSW Aquifer Interference Policy (AIP).

Monitoring data and impacts to date

The groundwater monitoring data presented in the EIS was largely obtained prior to 2021. This represents an absence of nearly two years of [the most recent] monitoring data – including any related discussion – which is insufficient against the conditions of the Supplementary SEARs requiring the proponent to provide "impact assessment data from mining to date". The significance of this absent data is further highlighted by more recent results presented in the 2021 Ulan Coal Mine Annual Groundwater Review (AGE, 2022), including in the Triassic and Jurassic formations, which the department considers this data relevant to the proposed modification:

Triassic strata

The 2021 Ulan Coal Mine Annual Groundwater Review (AGE, 2022) indicates that the drawdown measured at PZ10A (screened in the Triassic sediments) was approximately 15 m greater than originally predicted for MOD4. This is the most substantial observed deviation from predicted drawdown for any bore in the monitoring network.

Jurassic strata

In a Response to Submissions during the MOD 4 approvals process, (AGE 2018), it was asserted that "if the height of fracturing was extensive and exceeded the distance from the surface to the coal seam, then it is expected there would already be drainage from the unit being monitored by PZ10B, and this would result in a noticeable drawdown of water level in this bore".

According to the MOD6 groundwater modelling results, "no drawdown greater than 2 m is predicted in the Jurassic lithology due to either the approved or MOD6 mining. The reason for this is the limited extent of Jurassic sediments across the Ulan mine footprint, and where it is present it is mostly unsaturated." (GWIA, Appendix B)

This appears to be contradicted by monitoring results presented in the 2021 Annual Groundwater Review which indicate that drawdown in PZ10B (screened in the Jurassic sediments) exceeded model predictions by approximately 1.8 m (measured 2.25 m vs modelled 0.47 m).

Model calibration and uncertainty

Review of the groundwater model report, using the department's in-house assessment tool, identified potential deficiencies in information and reporting aspects of the modelling process.

For example, calibration for the MOD 6 numerical model utilises data dated prior to 2019 – ie. Excluding impacts from the last ~4 years of mining activities. While is understood that model calibration may not always necessitate use of a full set of monitoring data given more recently measured impacts, such as those listed above have potentially exceeded previously modelled predictions, DPE Water considers it prudent that the validity of the groundwater model should be demonstrated against more recent monitoring data.

Water Management Plan

Noting our issues raised in this advice, DPE Water recommends that the Water Management Plan is improved to better inform and respond to impacts exceeding modelled predictions.

A total of 18 bores were identified as being impacted (greater than 2 m drawdown) by mining activities during the active and post-mining phases. All of those bores should be captured by make good provisions to be consistent with the requirements of the NSW AIP.

Appendix 3 provides additional information in direct response to the DPE Water submission.

The assessment for the Proposed Modification used an updated site groundwater model with a different underlying software to that used previously for Modification 4 (MOD4). The site model had been updated using software (MODFLOW-USG) with some additional features over the previously used software (MODFLOW SURFACT), most notably being the structure and the ability to truncate model layers. This allows outcropping geological formations and their associated outcropping recharge zone to be represented. Through the change to MODFLOW-USG, the model structure was updated to better reflect the hydrostratigraphic units in the area.

Updated monitoring data has been applied to the calibration hydrographs and is presented in Attachment B of **Appendix 3** which concludes that the additional monitoring data both verifies the model and confirms it remains calibrated.

PZ10B is a monitoring bore that has been constructed in the Jurassic sediments above the Ulan Underground footprint. The bore is approximately 46 m deep, giving the base of the bore an elevation of 468.23 mAHD, putting the bottom of the bore at the base of the Jurassic sediments. As outlined in **Appendix 3**, the monitored water levels have varied from 474 to 483 mAHD. During some periods the groundwater level appears to respond to climatic conditions as indicated by the Cumulative Rainfall Departure (CRD). This however is not always the case, as demonstrated by with rising groundwater levels recorded during the drought period experienced from 2017 to 2020. This anomalous water level response does need future consideration, but the decline referred to from the 2021 Annual Review is within the historical variation for this bore and does not necessarily indicate drawdown due to mining.

Should the Proposed Modification be approved, the WMP and associated Groundwater Monitoring Program and Surface Water and Groundwater Response Plan will be updated. This will include updates to capture any additional impacted private bores as a result of the Proposed Modification. UCMPL is committed to continue to make good on any impacts to landholder bores, as per existing arrangements.

Refer to **Appendix 3** for additional detailed responses and up-to-date water level and water quality monitoring data.

4.3 Department of Planning and Environment – Biodiversity, Conservation and Science Directorate (BCS)

1. Amendment to the locations assessed in the BDAR following approval will require a project modification

BCS does not support the application of a biodiversity due diligence exercise to amend the final location of the proposal. Assumptions cannot be made about biodiversity values for areas that have not been assessed in the BDAR.

Biodiversity credit calculations for the project are quantified according to the spatial extent of the proposed development footprint and the 'maximum parameters' areas. The inclusion of any additional areas of impact to biodiversity values, beyond the scope of the areas assessed in the BDAR and EIS would require a modification to the approved project.

1.1 Update BDAR to comply with BAM by including assessment of all areas likely to be impacted by the project, including the final development footprint.

1.2 Any development outside the development footprint and the area assessed in the 'maximum parameters' assessment will require a modification.

The refined assessment approach for the flexible infrastructure described in this report and the Amended BDAR has been developed in conjunction with, and endorsed by, BCS and DPE. An assessment of worst-case impacts has been undertaken, which is fundamentally very similar to the approach previously referred to as the Maximum Parameters approach.

A preferred Development Footprint is presented as the preferred case, and then the contingency options have been assessed to allow for flexibility in placement of surface infrastructure. Refinements to these contingency footprints have been made to minimise the potential disturbance footprints particularly for the White box – Yellow Box – Blakely's Red Gum Woodland and Derived Native Grassland Critically Endangered Ecological Community (Box Gum Woodland CEEC). The various components of the Development Footprint have been defined into seven separate stages, and a BAM-C child case set up for each. This allows more flexibility as to which credits are retired for each stage of the Proposed Modification. Should any of the flexible infrastructure footprints be selected over the preferred approach, then the credits will be re-calculated and a minor modification may be sought.

Refer to Section 1.1, Section 1.3 and Section 6.0 of the amended BDAR.

2. The maximum parameter approach is not supported

BCS notes that the proponent has submitted two finalised BAM-C cases, one for the development footprint and another for the 'maximum parameters' assessment. It is unclear how the 'maximum parameters' BAM-C case could be used, without further amendment via a reduction to account for the unused options.

BCS does not support the maximum parameters approach. There is potential for all areas included in the maximum parameters calculation to be cleared if this is included in the conditions of consent.
In addition, there is no way to track and audit the retirement of biodiversity credits.

2.1 The maximum parameters approach presented in the BDAR is not implemented. The development should instead be staged in accordance with Recommendation 3.1 and 3.2.

Following the amendments to the Maximum Parameters approach, now referred to as worst-case approach as described above, a minor modification would be required if any of the flexible options are selected over the preferred development footprint layouts. PA 08_0184 would not refer to the worst-case BAM-C case; it is only presented as an indication of the worst-case impacts and potential credits that may be associated with the contingency options, if selected. It is envisaged that the Proposed Modification would be conditioned based on area based upper limits/worst-case impacts, should it be approved.

Refer to Section 1.3 of the amended BDAR.

3. A staged approach should be implemented for the different options

BCS considers that a BAM-C (child) case should be created for each option for Areas 1-4 in the development footprint. This would create a viable and flexible framework for the proponent to retire the credits for each BAM-C case, as each option is selected. For example, a separate BAM-C case should be created for each of the Options 1-9 in Area 1, Options 1-4 for Area 3, and for Area 4. The options not selected for the proposal can be discontinued.

A staged offset delivery strategy should be detailed in the BDAR. The options approach should be clearly outlined, identifying that each option is represented by a separate BAM-C case for each potential stage of the proposal, with the intention to select only one option for each Area 1, 3 and 4.

The quantum and types of credits calculated for each individual stage should be clearly presented in the revised BDAR.

The buffer for the proposed access track (Area 2), should include the maximum total impact required for construction, as this buffer will not be able to be staged.

3.1 Take a staged approach to the proposal by creating separate BAM-C cases for each option to allow for the flexibility of the development footprint.

3.2 Update the BDAR to reflect the proposed staging approach.

3.3 Assess and calculate the maximum offset liability for the proposed access track and buffer.

As per the BCS advice, there is now a staged approach to the Proposed Modification, with seven child cases established for individual components of the Development Footprint to allow for credits to be retired only for those parts of the Development Footprint that are constructed. The BDAR and BAM Calculator have been updated to reflect the staging approach.

The proposed access track (Area 2) is now presented as a fixed footprint. No flexibility is sought for this component of the Development Footprint.

Refer to Section 1.1, Section 9, Table 9.2 of the amended BDAR and the BAM Calculator.

4. Confirm that all proposed surface impacts have been included within the development footprint

Figure 3.3 Maximum Parameters Area in the BDAR shows the location of the Proposed Infrastructure (Footprint Assessed in Mod 6 BDAR) relative to the location of the Ulan Underground Infrastructure Pad Options, being Areas A, B, C and D. None of the Ulan Underground Infrastructure Pad Options, are included within the Proposed Infrastructure (Footprint Assessed in Mod 6 BDAR).

It is unclear if all surface infrastructure components required for the project have been included within the development footprint. If the intention of the proposal is to clear native vegetation at one of the Ulan Underground Infrastructure Pad Options, then at least one option i.e., Area A, should be included in the Development Footprint, and the Maximum Parameters Area calculations.

All areas of disturbance must be clearly identified in the BDAR, as they represent direct impacts to biodiversity values. The BDAR must identify the location(s) and total area of this disturbance and include this area in the development footprint.

4.1 Update the BDAR to include all areas of surface disturbance

As per BCS advice, the Development Footprint and worst-case contingency options have been refined. Wording describing the fixed areas and flexibility areas in the BDAR has also been refined.

Refer to Section 1.1, Section 1.3 and Section 6.0 of the amended BDAR.

5. Effort to avoid impacts to biodiversity is inadequate

The proponent has selected a range of options for Area 1 and Area 3, and a buffer for Area 2, with the intention of selecting options with the least impact on biodiversity. BCS notes that none of the options or buffers proposed for Areas 1, 2 or 3 avoid areas with important biodiversity values. White-Box CEEC is prevalent across all options for Areas 1, 2 and 3 in the development footprint. The buffer area provided to give flexibility for Area 2 provides negligible opportunity to reduce the area of impact on the species polygon for Large-eared pied bat and Eastern cave bat.

It does not appear that the location of significant biodiversity values was considered in determining the location of options. A merit assessment to determine the least impactful options for each area in the development footprint is not undertaken in the BDAR. The BDAR outlines the important biodiversity values which will be impacted by the proposal, including nationally listed threatened species and communities. None of the options presented provide substantial difference when considering impacts on important biodiversity values.

BCS considers the 'maximum parameters' approach does not conform to the BAM requirement to avoid and minimise impacts to biodiversity. Attempts must be firstly to avoid, and then to minimise impacts on native vegetation. Where possible, the proponent should try to locate the development footprint to avoid impacts as required by the BAM.

BCS recommends that the proponent consider refining the locations of surface infrastructure to avoid impacts on important biodiversity values identified in the BDAR.

5.1 Refine the location of the proposal to avoid direct and indirect impacts on native vegetation, threatened species, threatened ecological communities and their habitats in accordance with BAM.

5.2 Detail the avoidance measures that have been used to refine the location of the proposal.

The Development Footprint has been refined to reduce the impacts on biodiversity, in particular for large-eared pied-bat, eastern cave bat and Box Gum Woodland CEEC. No further reductions could practically be implemented for this Proposed Modification beyond those already included. The access track buffer previously applied to Area 2 is no longer presented as a contingency option. The refinements to the Development Footprint are described in detail in the BDAR. In particular, the eastern end of the original nine contingency options has been removed to avoid the Box Gum Woodland CEEC and the access track buffer is no longer presented, which reduces potential impacts on Box Gum Woodland CEEC and the threatened bat species associated with PCT 281. Details of avoidance measures are outlined in the BDAR.

Refer to Section 1.1, Section 1.3 and Section 4.1.1 of the amended BDAR.

6. Justification for removal of *Monotaxis macrophylla* from the candidate species list is not adequate

BCS notes that there are no habitat constraints listed for this species in the TBDC. The proposal site is within the known distribution for Monotaxis macrophylla. Although the presence/absence of records for a specific species may be used to inform the overall assessment, the absence of records cannot be used to exclude candidate species from the requirement for targeted survey.

The removal of Monotaxis macrophylla is not consistent with the assessment requirements set out in Steps 2 and 3 of Section 5 of the BAM. If Monotaxis macrophylla cannot be removed from the list of candidate species credit species, assessors must proceed to BAM Step 4: Determining the presence of a candidate species credit.

BCS notes that Monotaxis macrophylla cannot be assumed to be absent at a site based on the time since last fire exceeding six months. Given the conditions outlined by the proponent regarding time since last fire, survey would not be an appropriate method for determining species presence or absence. Instead, presence or absence of the species should be determined according to an expert report, or alternatively, the species can be presumed to be present at the subject site.

6.1 Obtain an expert report to determine the presence or absence of the Monotaxis macrophylla, or assume presence.

The survey requirements for *Monotaxis macrophylla* cannot be met due to a lack of recent fire at the site, and there is currently no species expert available for the species. While flora transects were undertaken in suitable habitat in the correct survey period, and it is considered unlikely this species would occur at the UCC, given that survey effort undertaken does not strictly meet the survey guidelines for *Monotaxis macrophylla*, the species is assumed present for this assessment.

Refer to Section 2.3.4.1, Table 3.6, Section 3.3.6, Table 6.4, Appendix A (Table A1.2) of the amended BDAR.

7. Justification for removal of Striped legless lizard from the candidate species list is not adequate

BCS notes that the proposal site is within the predicted geographic range for the Striped legless lizard. There are no known geographical limitations for the species in the TBDC. The absence of species records cannot be used to justify the exclusion of candidate species from the requirement for targeted survey. If the Striped legless lizard cannot be removed from the list of candidate species credit species, assessors must proceed to BAM Step 4: Determining the presence of a candidate species credit.

7.1 Conduct a targeted survey to determine the presence or absence of the Striped legless lizard, obtain an expert report, or assume presence.

The new Development Footprint does not include any PCT 618, and it is not present in the contingency areas. As such, striped legless lizard is no longer a candidate species. PCT 618 has been removed from all relevant sections of the BDAR and BAM Calculator.

8. Justification for removed of Grey-headed flying fox from the candidate species list is not adequate

BCS was unable to locate details of any searches for Grey-headed flying-fox camps or roosting habitat in the BDAR. Evidence of this survey being undertaken is required to justify that there are no breeding camps at the site.

8.1 Provide evidence, via survey results, to support the assertion that there are no breeding camps for Grey-headed flying-fox at the site.

No grey-headed flying-fox breeding camps were recorded in the Development Footprint or surrounding areas, despite extensive surveys being undertaken. All areas of the Development Footprint and surrounds were surveyed extensively over multiple seasons from 2020 to 2023 with no evidence of a flying fox camp observed. The nearest known breeding camp is located in Mudgee, approximately 60 kilometres south of the Development Footprint (National Flying Fox Monitoring Viewer, DAWE 2021). No further assessment is considered to be required.

This species has been surveyed and assessed in accordance with the guidelines for this species and breeding habitat was not detected.

Refer to Table 3.6 of the amended BDAR.

9. The targeted survey effort undertaken for threatened flora is inadequate

BCS notes an absence of species credit species transacts for some areas of the proposed infrastructure requiring targeted flora survey. This includes:

- *the eastern end of the proposed access track (PCT 281), and*
- *the western end of the proposed access track (PCT 479).*

In Figure 2.3 there is an absence of species credit species transects in the east and west ends of the Proposed Access Track Corridor (mapped as PCT 281 and 479 respectively).

Targeted species surveys are required to survey all areas of potential habitat. Potential habitat is the area of the subject land that support any listed habitat constraints and PCTs associated with the target species as per the TBDC. Adequate flora survey effort requires undertaking parallel field traverses in accordance with the maximum distance for the species' lifeform, across all areas of potential habitat. Within the subject land, PCT 281 is required to be surveyed for Acacia ausfeldii and Prasophyllum petilum, whilst PCT 479 is required to be surveyed for Commersonia procumbens and Tylophora linearis.

Further evidence is required to demonstrate that the targeted survey undertaken for candidate flora species was adequate. Where limitations on the detection of species are still evident, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 5.2.4 (2) of BAM.

9.1 Update the BDAR with additional evidence to demonstrate adequate survey effort or determine presence/absence using available alternatives.

Further surveys were undertaken in October 2022 and May 2023 following the first submission of the BDAR. The BDAR has been updated with details of these additional surveys, which now demonstrates that species survey requirements have been met.

Refer to Section 2.0, Figures 2.1 to 2.9 and Appendix B (Table B1.2) of the amended BDAR.

10. The targeted survey effort undertaken for some threatened fauna is inadequate

Targeted species surveys are required to survey all areas of potential habitat, being area(s) of the subject land that support any listed habitat constraints and PCTs associated with the target species as per the TBDC. BCS notes that for Figures 2.6 to 2.9:

- *Bush stone-curlew: there is an absence of Spotlight Survey at the east end of the Proposed Access Track Corridor (mapped as PCT 281),*
- *Gang-gang cockatoo and Little eagle: the location of the Hollow-bearing Tree Assessments and the Diurnal Bird Surveys are outside of the Proposed Access Track Corridor (mapped as PCT 281),*
- *Square-tailed kite: the location of the Hollow-bearing Tree Assessments and the Diurnal Bird Surveys are outside of the Proposed Access Track Corridor (mapped as PCT 281) and the Proposed Infrastructure (Area 3) (mapped as PCT 618),*
- *Barking owl, Masked owl, and Powerful owl:*
    - *There is an absence of Hollow-bearing Tree Assessments, Call Playback and Spotlight Survey at the east end of the Proposed Access Track Corridor (mapped as PCT 281),*
    - *The location of the Hollow-bearing Tree Assessments and the Call Playback (August 2020) are outside of the Proposed Infrastructure,*
- *Koala: The location of the Koala SAT is outside of the Proposed Access Track Corridor.*

Further evidence is required to demonstrate that the targeted survey undertaken for candidate fauna species was adequate. Where limitations on the detection of species are still considered to be present, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 5.2.4 (2) of BAM.

10.1 Update the BDAR with additional evidence to demonstrate adequate survey effort or determine presence/absence using available alternatives.

Further surveys were undertaken in October 2022 and May 2023 following the first submission of the BDAR. The BDAR has been updated with details of these additional surveys, which now demonstrates that species survey requirements have been met.

Refer to Section 2.0, Figures 2.1 to 2.9 and Appendix B (Table B1.2) of the amended BDAR.

11. Survey timing for some candidate-species credit species should be adequately justified

BCS notes that the candidate species credit species identified above [i.e. gang-gang cockatoo, square-tailed kite, powerful owl and masked owl] were excluded from further assessment on the basis that these species were surveyed for and found to be absent from the subject site.

BCS identifies that the targeted survey for the above-mentioned species is partly undertaken outside of recommended survey months. Further discussion should be provided to justify that the targeted survey undertaken for the species above was adequate to determine the absence of these species from the subject site.

11.1 Provide further justification that the targeted survey effort undertaken for candidate-species credit species surveyed partly outside a recommended survey month is adequate to determine the absence of these species from the subject site.

Further hollow surveys, spotlighting and call playback were undertaken in October 2022 and May 2023, following the first submission of the BDAR. The details of these surveys have been added to the BDAR. Additional detail has been added to the BDAR describing the hollow surveys undertaken for each species. No hollows were recorded in PCT 281, which predicts the majority of the hollow-dependent species.

Refer to Section 2.0 (specifically Section 2.3.4.2), Figures 2.1 to 2.9 and Appendix B (Table B1.2) of the amended BDAR.

12. The targeted survey effort for pink-tailed legless lizard is inadequate

BCS notes that there is an absence of Diurnal Reptile Search at the Proposed Infrastructure (Area 3) in PCT 618. Additionally, the locations of the Diurnal Reptile Search are located outside of the Proposed Access Track Corridor.

Targeted species surveys are required to survey all areas of potential habitat, being area(s) of the subject land that support any listed habitat constraints and PCTs associated with the target species as per the TBDC. Surveys for the Pink-tailed legless lizard must include all areas within the Development Footprint that include the listed PCTs for that species (including PCT 281 and PCT 618).

BCS notes that the targeted surveys for Pink-tailed legless lizard do not meet the species-specific survey requirements in the Threatened reptiles BAM survey guide.

Further evidence is required to demonstrate that the targeted survey undertaken for Pink-tailed legless lizard was adequate. Where limitations on the detection of species are still considered to be present, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 5.2.4 (2) of BAM.

12.1 Provide further justification to support the adequacy of targeted field survey for Pink-tailed legless lizard species that were considered to have a low detection probability.

The Disturbance Footprint no longer impacts on PCT 618, and therefore no further surveys for pink-tailed legless lizard are required in that zone. PCT 618 has been removed from all relevant sections of the BDAR and BAM Calculator.

Searches for the pink-tailed legless lizard were targeted in PCT 281 at the east end of Area 2 in October 2020 and October 2022 (the latter being post-submission of the BDAR), as shown on Figure 2.7 of the amended BDAR. The BAM reptile survey guidelines (DPE 2022b) state that suitable habitat for the species is "*rocky areas (or within 50 m of rocky areas) located within PCTs associated with the species*". The surveys of the entire area of PCT 281 (1.3 ha) undertaken in October 2022 did not identify any suitable rocky habitat for the pink-tailed legless lizard. Given the lack of suitable rocky habitat, no further survey is required to meet the survey guidelines.

Refer to Section 2.3.4, Table 2.3 of the amended BDAR.

13. Species polygons for Large-eared pied bat and Eastern cave bat must be clarified and may need revision

BCS notes that the Species Polygons in Figure 3.12 occur outside of the Development Footprint. The species polygons should be refined to map PCT 281 that is within 2 kilometres of cliffs/ potential roost habitat, and which is within the Proposed Access Track Corridor.

13.1 Clarify or revise the species polygons for Large-eared pied bat and Eastern cave bat to align with BAM.

Due to the linear nature of the Development Footprint, when clipped to the boundary, the species polygon was difficult to see, and therefore for visual context it was shown beyond the footprint on the figure, while only the area within the footprint was included in the assessment and BAM-C. It is noted that the BAM requires that maps are legible hence the decision to display the polygon in this way. The species polygon figures have now been updated and are clipped to the boundary.

Refer to Figure 3.12 of the amended BDAR.

14. The species polygons for some species that have been assumed present within the 'maximum parameters' area require review

Table 6.4 of the BDAR describes how species polygons have been calculated for each of the species that have been assumed to be present. It is noted that in most cases the species polygons incorporate the entire areas of all associated PCT's for the species. BCS supports this approach.

BCS note that the species polygons for two species, Barking owl and Commersonia procumbens do not incorporate all potential habitat.

For the Barking owl Table 6.4 states "until detailed surveys of the contingency areas are undertaken, it is unknown whether any nest trees are present. As such, for the purposes of the maximum parameters assessment, four 140 m radius circles (one for PCT 281, one for PCT 478, one for PCT 481 and one for PCT 479 (Intact/thinned condition types only) are assumed (4 tree circles total). The outcomes of the broad assessment of hollow density within the infrastructure contingency footprints have guided these numbers".

BCS does not support this approach. Where surveys have not been conducted and the presence of or number of nest trees is unknown the species polygon must incorporate the entire area of potential habitat, in accordance with Section 5.2.5.4 of the BAM. In this case the entire area of PCT 281, PCT 478, PCT 479 and PCT 481 should be included in the species polygon.

BCS note that the same approach has also been applied to the species polygons for Gang-gang cockatoo, Powerful owl, and Masked owl, however in these cases the buffered area incorporates all potential habitat therefore the final polygon is adequate.

For Commersonia procumbens Table 6.4 states "the species polygon covers all areas of three PCTs (478, 479 and 481) that could be impacted in the Maximum Parameters Area".

BCS notes that the vegetation zone '481_Regen', which has an area of 0.4 hectares has not been included in the polygon. This vegetation should be included in the species polygon unless appropriate justification is provided for its exclusion.

14.1 Review species polygons for Barking owl and Commersonia procumbens to incorporate all potential habitat for the species.

The approach to species polygons has been revisited for the new updated worst-case impact assessment (replacing the Maximum Parameters assessment). Many of the species credits previously needed to assume presence no longer need to be included as there are no contingency areas in PCT 281 and it has been surveyed adequately for the majority of species.

The worst-case assessment approach to species polygons for the barking owl and other species listed has been revisited and updated where necessary. The species polygon for *Commersonia procumbens* now includes vegetation zone PCT 481_Regen.

Refer to Table 6.4 and Figure 6.6 to Figure 6.11 of the amended BDAR.

15. Spatial layers for all species polygons in the 'maximum parameters' area have not been provided

No spatial layers have been provided for the species polygons in the 'maximum parameters' area. BCS notes that a number a species have been assumed present in the 'maximum parameters' area and that the species polygons have been calculated using entire suitable vegetation zones. Although the species polygons have been derived directly from the vegetation mapping final species polygon spatial layers must be provided as part of the data package.

15.1 Provide spatial layers for each of the species' polygons.

Species polygons have now been prepared and shown on relevant figures. Spatial files have been provided.

Refer to Figures 6.6 to 6.11 of the amended BDAR.

16. Address the expected impacts of subsidence on surface biodiversity values

Appendix 7 in the Modification Report details a range of surface impacts that are to be anticipated as a result of the proposed modification. These impacts include vertical subsidence, tilt, strain and surface cracking, horizontal movements and unconventional subsidence.

It is widely acknowledged that mining-induced subsidence can cause impacts to the topography, hydrology and soil properties at the surface. Consideration must be given to the potential for water logging, erosion, modified soil, and groundwater hydrology that can result in soil chemical and physical changes. All potential impacts must be considered in combination under local conditions, including how these changes might impact biodiversity values which operate as part of an ecosystem in the development footprint.

The expected impacts of subsidence resulting from the proposal on surface biodiversity values including native vegetation, threatened entities and habitats have not been adequately outlined and addressed in the BDAR. Where there is uncertainty surrounding the impact of subsidence on the biodiversity values at the development site, the precautionary principal should be applied.

BCS is not in a position to provide advice on subsidence, aspects of hydrology/groundwater and interpret the niche and complex data associated with these reports in EIS submissions. BCS recommend that Planning and Assessment engage an independent expert to provide advice.

16.1 NSW Planning engage an independent expert to provide advice on the impacts of subsidence on hydrology and groundwater.

16.2 The BDAR should address the potential for the proposed modification to result in impacts to biodiversity values caused by subsidence.

Details relating to groundwater and surface water impacts are provided in Sections 5.2.1.4 and 5.2.1.5 (and later more briefly in 5.2.8) of the amended BDAR. Appendices to the Modification Report include a Groundwater Impact Assessment and Surface Water Impact Assessment which provide more extensive detail. Evidence from many years of monitoring the vegetation following longwall mining in other parts of the UCC shows that there have been no discernible impacts on the surface vegetation.
Additional discussion is provided in Section 5.3 (Table 5.6) of the BDAR in relation to Prescribed impacts on hydrological processes.

Refer to Sections 5.2.1.4, Section 5.2.1.5, Section 5.2.8, and Section 5.3 (Table 5.6) of the amended BDAR.

The BDAR also discusses in detail the potential impacts on biodiversity that may occur as a result of subsidence. Evidence from many years of monitoring following longwall mining in other parts of the UCC shows that there have been no discernible impacts on the surface vegetation and threatened microbat populations continue to persist.

Refer to Section 5.2.1 of the amended BDAR.

17. Prescribed impacts on habitat of threatened species or ecological communities associated with karst, caves, crevices, cliffs and other geological features of significance, rocks, human-made structures or non-native vegetation should be offset

BCS notes that cave collapse and declining detection of target microbat species have been observed at the existing development site. Mitigation measures proposed to address potential impacts from subsidence on cliff line habitat within the proposed modification on the above-mentioned microbat species are limited to monitoring. Consideration should be given to the potential for further collapse of significant cliff habitats. The BDAR should also assess the impacts of the modification in further exacerbating the decline in target microbat species. Where there is uncertainty surrounding the impact of subsidence on the biodiversity values at the development site, the precautionary principal shall apply.

BCS notes that the impact cliff line habitat from subsidence of the proposed modification would represent a residual prescribed impact to the microbat species assumed present at the proposal site. This residual prescribed impact will require offsetting via biodiversity credits (outside of any credit requirements generated by BAM-C for direct impacts) and/or other listed conservation measures in accordance with Section 6.1.2(b) of the Biodiversity Conservation Regulation 2017 (BC Regulation).

Section 7.14(4) of the BC Act requires the retirement of biodiversity credits prior to any development being carried out that would impact on biodiversity values. BCS does not support the approach of deferring the offsetting of residual prescribed impacts. In addition, adaptive management measures with targeted responses to address potential impacts should be implemented.

As there is no set methodology for the quantification of residual prescribed impacts, we recommend that the assessor consult with BCS to determine a method of credit quantification that will adequately offset the worst-case scenario impact resulting from the proposal. The assessor should clearly document the decision pathway and justification for suggested credit numbers or other compensatory actions.

17.1 The assessor must quantify credits to be offset for threatened species that will receive residual prescribed impacts resulting from the proposal, based on a maximum potential impact from the proposed modification, in consultation with BCS.

17.2 An adaptive management plan containing a trigger, action, response plan, should be developed that reduces and mitigates prescribed impacts on threatened bats.

The Proposed Modification area supports a small area of cliff line habitat (128 metres), which has been surveyed and not found to support any known breeding habitat for threatened cave roosting microbats. Subsidence predictions for the Proposed Modification indicate that subsidence would be consistent with impacts previously observed in other longwalls for Ulan West and Ulan Underground. Years of monitoring in areas previously mined indicates that:

- subsidence impacts observed are reflective of predictions and are within the required performance measures outlined in PA 08_0184
- there is no perceptible change in surface vegetation condition
- threatened microbat populations continue to persist in strong numbers.

A report has been prepared by Eco Logical to provide a summary of the outcomes of microbat monitoring since the one instance of declining bat detection in 2019. The Eco Logical report indicates high activity levels recorded from target threatened microbats in the subsequent years since 2019. A summary of that report is provided in Section 5.2.1.6 of the amended BDAR and the report is included as Appendix E of the amended BDAR.

Details of microbat monitoring events in 2021 and 2022 which were not available at the time of first submission, have also been added to the amended BDAR. The outcomes of these monitoring reports are provided in Section 5.2.1.6 of the amended BDAR.

Refer to Section 5.2.1.3, Section 5.2.1.6, Section 5.3 and Section 5.4.2 of the amended BDAR.

UCC currently has a Biodiversity Management Plan (UCPML, 2022) that includes performance measures and indicators and management responses. On approval of the Proposed Modification, the Plan would be amended to include relevant adaptive management measures. Further to this, a specific Microbat Management Plan would be developed to reduce and mitigate potential prescribed impacts on threatened Microbats. The BDAR has been updated to include the commitment to the preparation of a Microbat Management Plan.

Refer to Section 4.2.1 of the amended BDAR.

18. Prescribed impacts on water bodies, water quality and hydrological processes must be adequately assessed

BCS notes that Appendix 7 of the Modification Report raises number of impacts to hydrology the proposal may result in including ponding in the main channel of Mona Creek, changes in groundwater behaviour above the Proposed Modification extension areas, and draw down of the regional groundwater level for several kilometres around each longwall panel.

BCS notes that the impacts to hydrology raised in Appendix 7 of the Modification Report are not outlined in the BDAR. Adequate assessment is not provided in the BDAR to outline the impacts of the proposal on water quality, water bodies and hydrological processes. Consideration should be given to which threatened entities may be impacted by these changes. Relevant evidence i.e., published literature is needed to support the predicted impacts. Where there is uncertainty surrounding the impact of subsidence on the biodiversity values at the development site, the precautionary principal shall apply.

The proponent should propose an modelling method and quantum which is appropriate to the residual impacts expected to occur in consultation with BCS. In addition, a Trigger Action Response Plan (TARP) with adaptive management measures and targeted responses to address potential impacts that can be implemented to assist in accounting for the uncertainty of impacts is also required.

As outlined above, BCS is not in a position to provide advice on subsidence, aspects of hydrology/groundwater and interpret the niche and complex data associated with these reports in EIS submissions.

18.1 A full assessment of the extent of impacts, including predicted consequences to the threatened entities, resulting from impacts of the proposal on water bodies, water quality and hydrological processes should be conducted in accordance with BAM.

18.2 The assessor must quantify credits to be offset for threatened species that will receive residual prescribed impacts resulting from the proposal, based on a maximum potential impact from the proposed modification, in consultation with BCS.

18.3 An adaptive management plan containing a trigger, action, response plan, should be developed that reduces and mitigates prescribed impacts on water bodies, water quality, and hydrological processes.

Details relating to groundwater and surface water impacts are provided in Sections 5.2.1.4 and 5.2.1.5 (and later more briefly in 5.2.8) of the amended BDAR. Appendices to the Modification Report include a Groundwater Impact Assessment and Surface Water Impact Assessment which provide more extensive detail. Evidence from many years of monitoring the vegetation following longwall mining in other parts of the UCC shows that there have been no discernible impacts on the surface vegetation. Additional discussion is provided in Section 5.3 (Table 5.6) of the BDAR in relation to Prescribed impacts on hydrological processes.

Refer to Sections 5.2.1.4, Section 5.2.1.5, Section 5.2.8, and Section 5.3 (Table 5.6) of the amended BDAR.

Additional information has been provided in the amended BDAR in relation to prescribed and indirect impacts on bat species due to subsidence.

Refer to Section 5.2.1.3, Section 5.2.1.6, Section 5.3, Section 5.4.2 and Appendix F of the amended BDAR.

Further to this, a specific Water and Hydrology Management Strategy will be included in the Biodiversity Management Plan to reduce and mitigate potential prescribed impacts on water bodies, water quality and hydrological processes. The BDAR has been updated to include the commitment to the preparation of a Water and Hydrology Management Strategy. The Water and Hydrology Management Strategy will consolidate relevant aspects of the following UCC Management Plans already in place (and adapt to the specifics of Modification 6 where relevant):

- Biodiversity Management Plan.
- Water Management Plan.
- Groundwater Monitoring Program.
- Surface Water and Groundwater Response Plan.
- Surface Water Monitoring Program.

Refer to Section 4.2.2 of the amended BDAR.

19. Cumulative impacts are not adequately assessed

Under the cumulative impact assessment guidelines for state significant projects (DPE 2022), the proponent is to undertake a review of the project and other potentially relevant future projects that may be developed over the same time period or similar timeframes as the project.

The proposal should consider cumulative impacts of any other large-scale or similar developments proposed within the region. For example, the neighbouring Moolarben Coal Complex OC3 Extension Project proposes impacts to many of the same biodiversity values including the Large-eared pied bat and the Eastern cave bat, as well as Box-Gum Woodland. The cumulative impact on biodiversity values needs to be addressed.

19.1 An analysis of similar developments in the surrounding area (existing and proposed) should be included to provide a cumulative impact assessment for biodiversity values.

The *Cumulative Impact Assessment Guidelines for State Significant Projects* (Cumulative Impact Guidelines) define cumulative impacts as the result of incremental, sustained and combined effects of human action and natural variations over time and notes that they can be both positive and negative. Cumulative impacts can be caused by the compounding effects of a single project or multiple projects in an area, and by the accumulation of effects from past, current and future activities as they arise.

As a modification, the Modification Report had regard for the Cumulative Impact Guidelines, where relevant. The Cumulative Impact Guidelines recognise the ability to predict cumulative impacts, and the limitations of proposed methods, while having regard to approved assessment methods for relevant matters (e.g. the BAM). As per the Cumulative Impact Guidelines, the NSW Government has a comprehensive framework in place to manage cumulative impacts at the strategic-level. The BAM provides such a comprehensive strategic framework to assess biodiversity impacts.

Regardless, key proposed or approved projects in the area include:

- the existing approved UCC
- the existing approved Moolarben Coal Complex and the proposed OC3 Extension Project
- the existing approved Wilpinjong Coal Mine
- the recently approved Bowdens Silver Project
- a number of renewable energy projects in the wider region associated with the Central West Orana Renewable Energy Zone.

It is noted that the Moolarben Coal Complex OC3 Extension Project was placed on exhibition at the same time as the Proposed Modification, therefore information on its expected impacts to biodiversity were not available at the time of submission of the original BDAR.

The biodiversity impacts of each of the above projects have been assessed individually by their proponents using the BAM and have been offset in a like-for-like manner such that there is no net loss to biodiversity values as a result of the developments. In fact, biodiversity offsets established for the three approved coal mines in the region protect an area of land approximately 2.7 times the size of the approved impact areas.

Although the Proposed Modification will include minor biodiversity impacts to some of the same threatened species and communities as the other approved and proposed projects in the region, it will also add to the cumulative area of land conserved for these threatened entities in the form of offset areas, thereby contributing to the ongoing viability of affected species and communities.

20. The assessment of SAII for White Box – Yellow Box – Blakely's Red Gum Woodland CEEC requires revision

The proposal does not offer options which provide for avoidance of the Box Gum Woodland CEEC. Given the very large reduction in geographic distribution for this entity, avoidance of further reduction in geographic extent should be one of the highest priorities for demonstrating avoidance.

BCS notes that the SAII assessment detail for this entity has not been completed in accordance with BAM for the total area under the maximum parameters assessment. No data has been provided to estimate the impact the proposal will have on the viability of the entity at the local and IBRA subregional/regional scales, as is required by section 9.1.1 of the BAM. Detail on the anticipated impacts on subsidence on White Box – Yellow Box – Blakely's Red Gum Woodland CEEC have not been provided.

Further detail, as outlined above, is required to enable the decision-maker to decide if the proposal is likely to increase the extinction risk of any of the relevant entities and whether impacts/losses/declines are likely to be serious and irreversible.

20.1 Further information should be provided to justify why the development footprint cannot be redesigned to avoid the loss of White Box – Yellow Box – Blakely's Red Gum Woodland CEEC.

20.2 Revise the SAII assessment for White Box – Yellow Box – Blakely's Red Gum Woodland CEEC to fully address section 9.1.1 of the BAM.

Since submission of the BDAR, the Development Footprint (including the worst-case impact) has been reduced such that the impacts on the Box Gum Woodland CEEC have been reduced as much as possible while still having a viable project. The SAII assessment has been updated to take into account the worst-case impacts of the Proposed Modification on the Box Gum Woodland CEEC and describes the potential impacts on the CEEC resulting from subsidence.

Refer to Section 5.4 and Table 5.8 of the amended BDAR.

21. Present information for decision-maker to determine SAII for threatened species

Both microbat species have previously been recorded in the locality. BCS notes that, as well as loss of breeding habitat, other impacts such as the direct loss of breeding individuals should be included in the assessment of impact significance.

Monitoring of microbat species has shown evidence of reductions in detecting species presence at the development site. Section 6.2.1.2 of the BDAR outlines that cliff line habitats, known to be important habitat for cave-roosting bats, occur in the proposed long wall areas (including confirmed nearby breeding roosts). Potential impacts on cliff lines that may occur following longwall mining include rock falls and perceptible cracking as well as cave collapse.

The impact of the proposal to micro-bat species, via the direct loss of breeding individuals caused by subsidence, has the potential to meet the criteria under SAII Principal 4. As such, BCS recommend that an SAII assessment is undertaken for both species in relation to SAII Principle 4. If there is an absence of available data or matters are uncertain the precautionary principle should be applied, a worst-case scenario assumed, and a maximum quantum of impact presented.

21.1 Undertake an SAII assessment for all relevant SAII potential entities, including the large-eared pied bat and large bent-wing bat, in accordance with section 9.1.2 of BAM.

A SAII assessment for large-eared pied-bat, large bent-winged bat and eastern cave bat has been included (the latter has recently been recorded in the locality).

Refer to Section 5.4 and Table 5.9 of the amended BDAR.

22. Inconsistencies in the use of plots for vegetation zones between BAM-C assessments

BCS notes that the same vegetation plot data has been entered into the BAM-C case for both the 'development footprint' area (child case 22259) and the 'maximum parameters' area (child case 30776), despite these BAM-C cases covering different areas at the site. The vegetation plot data entered into both BAM-C case has been separated into each vegetation zone. BCS accept this approach as the vegetation zones traverse both areas.

BCS note that a different number of plots have been entered in the BAM-C for the 'development footprint' versus the 'maximum parameters' for some vegetation zones. This has resulted in different vegetation integrity scores (VI scores) being calculated for the same vegetation zones '478_intact', '479_intact' and '481_intact' across the two BAM-C cases.

BCS understand that this may have been done to meet the different minimum plot numbers required, as the vegetation zones in the 'maximum parameters' area are larger areas. However, all plots must be entered into both BAM-C cases. Even where minimum plot numbers have been met, if additional plots have been completed and they are representative of the relevant vegetation zone, this plot data must be entered into the BAM-C. All plot data entered into the 'maximum parameters' BAM-C case for each vegetation zone must also be entered into the equivalent vegetation zone in the 'development footprint' BAM-C case.

22.1 Ensure that all representative plot data collected for each vegetation zone at the subject site, is entered into all applicable BAM-C cases.

All plot data available for each vegetation zone has been included in the BAM-C for each child case (including stages and worst-case impact cases).

Refer to Section 2.2.3, Section 6.3.1, and Appendix C of the amended BDAR and the BAM Calculator. Raw field data will also be submitted to BCS.

23. Area calculations for PCTs are inconsistent between the BDAR, BAM-C and spatial data

A review of the BDAR, BAM-C and spatial data has identified inconsistencies that the applicant and accredited assessor should be aware of. The area calculations for six PCTs (PCT 281, PCT 476, PCT 478, PCT 479, PCT 481 and PCT 618) in the 'maximum parameters' area are not consistent across all data sources. Whilst the area calculations across the BDAR and BAM-C are consistent, these calculations are inconsistent with the spatial data provided.

…

It should be noted that the above spatial areas have been calculated by BCS by clipping the vegetation mapping layers to the footprint boundary layers provided by the accredited assessor, as no final layer was provided as part of the data package. The assessor must ensure that all final layers for the BDAR figures and BAM-C are provided as part of the data package for verification.

23.1 Review the BDAR, BAM-C and spatial data to ensure that all data sources are consistent.

The vegetation mapping layer provided has been clipped to the boundaries for ease of review of area calculations. Given the extensive changes to the footprints, all area calculations throughout the BDAR and the BAM Calculator have been updated and carefully checked and are considered to be accurate and correct.

24. Post-consent adaptive management plans must be prepared in accordance with SMART principals and contain quantifiable triggers for adaptive management

BCS notes that the detail provided in Section 4.2 of the BDAR does not establish a monitoring schedule or allocate responsibility for managing disease. BCS acknowledges that further information may be provided in the Ulan Complex Biodiversity Management Plan.

If consent it granted, BCS will provide detailed review and comment on relevant post-consent documentation for impact mitigation, including the Biodiversity Management Plan. BCS requires that strategies for residual and indirect impact mitigation adhere to SMART principles with quantifiable triggers for adaptive management in accordance with Section 2.6 of the BAM Operational Manual Stage 2.

24.1 Ensure post-consent adaptive management plans are prepared in accordance with SMART principals and contain quantifiable triggers for adaptive management.

Additional context around SMART principles and quantifiable triggers has been added to the amended BDAR.

Refer to Section 4.2 of the amended BDAR.

25. The BDAR should be certified by the accredited assessor

The lead assessor for the project must certify in the Biodiversity Development Assessment Report (BDAR) that the report has been prepared on the basis of the requirements and information provided under the Biodiversity Assessment Method (BAM) as at a specified date, within 14 days of the date the report is submitted to the decision-maker.

The accredited assessor has not certified the BDAR i.e., by signing the first page. The BDAR must also provide an assessment of compliance with the minimum information requirements outlined in Appendix K of BAM.

25.1 The BDAR should be certified by the accredited assessor.

25.2 The BDAR should include an assessment of compliance with the minimum information requirements including Table 24 and 25 of BAM.

A certification page has been added to the BDAR and this has been signed off by accredited assessor Alaina Casey.

An assessment of compliance has also been prepared and is provided as Appendix A to the amended BDAR.

26. The mapping of the native vegetation extent requires revision

BCS notes that the Native Vegetation shown in Figure 1.9 does not appear to be buffered around the outside edge of the boundary of the subject land. A portion of the Proposed Modification Area in the east is not included.

The Location Maps should be updated to show the 1500 m buffer surrounding the outside edge of the boundary of the subject land.

26.1 Revise mapping to comply with the requirements in the BAM.

The native vegetation 1,500 m buffer has been updated to include all parts of the Modification Area and has been updated on all relevant Figures.

Refer to Figures 1.8 to 1.10 of the amended BDAR.

4.4 Department of Regional NSW

4.4.1 Mining, Exploration and Geoscience

MEG Position

MEG considers the Modification to be an efficient use of resources and that it will provide an appropriate return to the NSW Government.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions adequately recover resources and will provide an appropriate return to the state.

Noted.

Royalty Context

The Proponent's royalty estimate is $8 million higher than MEG's – this is explained by differences in the price and production profile and is reasonable for the purposes of this analysis.

MEG notes that prices are $25 higher than was forecast when the Proponent prepared this analysis, and this means that the Proponent's rate of return would increase from around 40% to nearly 100%; an increase from ~$400 million to nearly $1 billion. At the same time, royalties would increase by about $25 million.

The differences in royalty estimates are noted. While the Economic Impact Assessment completed for the Proposed Modification is conservative, it adequately predicts potential economic benefits of the Proposed Modification.

Resource Recovery

MEG considers that the Modification would be an efficient development of coal resources that would provide an appropriate return to the State. Additionally, giving due consideration to the constraints of the location the 25 Mt of high-quality coal resources would likely be sterilised if the Modification is not approved.

Noted.

JORC Code Considerations

The Proponent has completed resource and reserve estimations for the Modification in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC code) produced by the Australasian Joint Ore Reserves Committee. The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves. Reserves are the economically mineable portion of a resource. A JORC compliant reserves report assists in independently assessing the commercial viability of the Modification and the proposed mining method.

In view of the opportunities and constraints outlined in the Proponent's Modification and based on the information currently available, 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 represents an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions adequately recover resources and will provide an appropriate return to the state.

Noted.

Application of section 380AA of the *Mining Act 1992*

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.

Noted.

Requirement for a mining lease

As coal is a prescribed mineral under the Act, the Proponent is required to hold appropriate mining title(s) allowing for mineral extraction, such as a mining lease, to undertake mining.

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

Noted.

Application of section 65 of the Mining Act 1992

A development application under the Environmental Planning and Assessment Act 1979 must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

Section 65 states:

The Minister must not grant a mining lease over land if development consent is required for activities to be carried out under the lease unless an appropriate development consent is in force in respect of the carrying out of those activities on the land.

Noted. As outlined above, a mining lease application has been lodged with approval subject to the determination of the Proposed Modification.

Biodiversity offset assessment

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.

Noted. As outlined in Section 6.6.7 of the Modification Report, UCMPL is committed to delivering a biodiversity offset strategy that appropriately compensates for the unavoidable loss of ecological values as a result of the Proposed Modification.

UCMPL is currently considering the merits of all options available under the Biodiversity Offset Scheme (BOS) to satisfy the offsetting requirements for the Proposed Modification. The offset options available under the BC Act and BC Regulation include:

- land based offsets through the establishment of new Stewardship Sites or by retiring credits from existing Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

Should land based offsets be progressed, UCMPL will consult with relevant authorities including MEG should resource sterilisation or interaction with mining tenements be likely.

Summary of review

MEG considers that should the Modification be approved; efficient and optimised resource outcomes can be achieved.

MEG requests that it be provided with an opportunity to review the draft conditions of approval before finalisation and any granting of development consent.

Noted.

4.4.2 Resources Regulator

Our assessment of the Ulan Coal Modification 6 Project (MP08_0184-Mod-6) indicates the proposed modification does not alter the existing subsidence risk profile at the site. It is expected that the risks due to subsidence arising from the proposed modification can be managed using established practices already in place.

It should be noted the mining operation will be regulated in relation to safety by the Resources Regulator under relevant provisions of work health & safety laws, including in relation to subsidence Section 35 – Notification of high-risk activities and Section 70 – Subsidence of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022.

Any strategy, plan or program required under the Development Consent for the project that has an intended outcome related to the health and safety people affected by the proposed mining should also be developed and implemented consistent with the relevant provisions of WHS law as described above.

It is not expected that the proposed modifications will vary any previously assessed environmental impacts.

Noted.

Limitations

It should be noted that the Resources Regulator does not provide any endorsement of the proposed rehabilitation methodologies presented in the plans provided. Under the conditions of a mining authorisation granted under the Mining Act 1992, the Resources Regulator requires the holder to adopt a risk-based approach to achieving the required rehabilitation outcomes.

The applicability of the controls to achieve effective and sustainable rehabilitation is to be determined based on site-specific risk assessments conducted by the authorisation holder. An authorisation holder may also be directed by the Resources Regulator to implement further risk control measures required to achieve effective rehabilitation outcomes during the life of the mine.

Noted.

Regulatory Requirements if Approved

The proponent will be required to comply with rehabilitation requirements under the mining authorisations prior to the commencement of the works associated with the proposal.

The Resources Regulator may undertake assessments of the mine operators' proposed mining activities under the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Regulation as well as other WHS regulatory obligations.

Noted.

The Mining Act Inspectorate within the Resources Regulator undertake risk-based compliance and enforcement activities in relation to obligations under the Mining Act 1992. This includes undertaking assessment and compliance activities in relation to mine rehabilitation activities and determination of security deposits. To ensure consistency, the Regulator requests the opportunity to review a copy of the draft development consent prior to any approval of the project.

The Mine Safety Inspectorate within the Resources Regulator is responsible for ensuring the mine operators' compliance with the Work Health and Safety (WHS) legislation, in particular the effective management of risks associated with the principal hazards as specified in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

Noted.

4.5 Department of Primary Industries – Agriculture

DPI Agriculture has undertaken a review of the Ulan Coal Modification 6 Modification Report and its appendices, prepared by Umwelt, November 2022. The reports have considered the main issues related to impacts on agricultural land including subsidence, groundwater drawdown, contamination of land and water resources, dust, spread of weeds and erosion and sedimentation. The Modification report has outlined proposed monitoring and mitigation measures to address the impacts from the proposed development and proposes to develop more detailed management plans where required.

NSW DPI is satisfied that the proposed mitigation and monitoring measures to address the agricultural impacts are adequate.

Noted.

4.6 NSW Environment Protection Authority

The EPA has reviewed the report titled "Ulan Coal Modification 6 – Underground Mining Extension – Modification Report", dated November 2022, and prepared by Umwelt (Australia) Pty Limited.

…

The report concluded that the potential impacts on water, air and from noise resulting from the construction and operation of the project will be within the limits stipulated by both the existing planning consent and Environment Protection Licence 394 (the licence).

The EPA recommends that the relevant air, noise and water management plans be updated to reflect the activities covered by the project should project approval be granted. The applicant will be required to apply to vary the licence should the project be approved.

UCMPL acknowledges that existing air, noise and water management plans for the UCC will need to be updated, and the Environment Protection Licence (EPL 394) varied, should approval be granted for the Proposed Modification.

4.7 Transport for NSW

TfNSW has reviewed the information provided and raises no objection to or requirements for the proposed modification as it is considered there will be no significant adverse impact on the nearby classified (State) road network.

Noted.

4.8 Heritage NSW

The Aboriginal Cultural Heritage Assessment has been prepared in reference to the relevant Heritage NSW guidelines as required by the SEARs. Based on the assessment provided, Heritage NSW agrees with the management recommendations outlined in the assessment provided, and as such, has no additional comments with respect to the proposed modification proceeding. Heritage NSW does not require any further agency consultation in relation to this project.

Noted.

4.9 Mid-Western Regional Council

Can Council please be informed of the Biodiversity Offset Strategy outcome and the manner in which offset will be achieved. If stewardship sites are being considered, Council would be supportive of UCMPL sourcing local stewardship sites within the LGA.

Noted.

UCMPL will notify MWRC of the Biodiversity Offset Strategy outcome and will consider local stewardship sites where feasible.

Rehabilitation of cleared areas required for infrastructure and the access track should be implemented with alternative local species if local endemic species cannot be sourced, rather than non-local providence stock/seed. Council can assist with providing species palates from local native plant nurseries which will provide suitable alternative species if preferred species cannot be sourced due to seasonal conditions.

Mitigation Measure 8.5 provided in the updated summary of mitigation measures for PA 08_0184 (Appendix 2 of the Modification Report) commits to the use of local provenance species in revegetation works where possible. MWRC's offer of assistance in sourcing local species is noted.

Council also requests the future plans for long term subsidence monitoring/mitigation within the direct impact area particularly along cliff ledges and caves include long term microbat population studies/trends as has been conducted in the past within the larger UCMPL site.

As detailed in Section 6.6.5 of the Modification Report, should the Proposed Modification be approved, UCMPL will update the existing Biodiversity Management Plan (BMP) in accordance with any relevant development consent requirements. In accordance with the BMP, UCMPL will continue to undertake pre-mining inspections of the cliff lines within the predicted subsidence affection areas at least two years prior to undermining to identify any large-eared pied bat maternity roosts and establish monitoring sites. If a maternity roost is identified through these detailed surveys, mitigation and management requirements will be determined in consultation with an appropriate expert and relevant authorities. Micro-bat monitoring is undertaken during and two years post-longwall extraction at the monitoring sites chosen from the pre-mining cliff line assessment for each longwall panel and this process will continue with the Proposed Modification.

There are no cliff edges or caves within the direct impact area associated with the Proposed Modification.

5.0 Response to Organisation and Community Submissions

As outlined in **Section 2.0**, a total of 14 community stakeholder group / organisation submissions and 38 individual community submissions were received in relation to the Proposed Modification. Of the community stakeholder group / organisation submissions, one was in support and 13 in objection to the Proposed Modification.

Several of the organisation and community submissions received were similar or had consistent themes. Where this is the case, the theme of the concern has been provided in bold in the text boxes below with some examples of specific quotes from the submissions provided to assist the reader.

Responses to the issues raised in these submissions are included in the following sections.

As outlined in **Section 2.2**, issues have been characterised in accordance with the Guidelines (DPIE, 2022) into the following broad groups:

- the economic, environmental and social impacts of the Proposed Modification (e.g. amenity, air, biodiversity, heritage)
- the justification and evaluation of the Proposed Modification as a whole (e.g. consistency with Government plans, policies or guidelines)
- issues that are beyond the scope of the Proposed Modification (e.g. broader policy issues) or not relevant to the Proposed Modification
- procedural matters (e.g. level or quality of engagement, compliance with the SEARs, identification of relevant statutory requirements)
- the Proposed Modification (e.g. the site, the project area, the physical layout and design, key uses and activities, timing).

5.1 Economic, Environmental and Social Impacts

5.1.1 Climate Change and Greenhouse Gas Emissions

Contribution to climate change and greenhouse gas emissions

The Ulan Coal Modification 6- Underground Mining Extension will exacerbate the impacts of climate change and would take NSW in the wrong direction, adding to the state's GHG inventory at a time when costs from extreme weather events exacerbated by climate change are rising and urgent and deep reductions in GHG emissions are required. Lock the Gate

The EIS states in many places that 'Glencore's focus remains on reducing its total emissions footprint, including Scope 3 emissions, which is critical to achieve the goals of the Paris Agreement'. Therefore the proposal is at odds with the parent company's own objective, and the attempts to disguise the true consequences of the additional greenhouse gases are 'greenwashing'. Mudgee District Environment Group

The greenhouse gas effects of these emissions would cause significant harm to the health and biodiversity of areas in which Australia has international obligations: World Heritage sites including the Great Barrier Reef, and Ramsar wetlands. Climate Change Balmain-Rozelle

CWEC objects to the proposal to cause the release of a further 64.97 Mt of GHG through the lifetime of the proposed extension. Central West Environment Council

It is clearly evident that we need to be moving away from the use of coal for energy generation. Global temperature increases are already nearing 1.5C and without significant changes to how we obtain energy will rise beyond 2 degrees, with resultant catastrophic changes to the climate and the livelihood of people around the world. Planning for extensions to current coal mines in the current climate crisis could reasonably be described as absurd. S-52158218

It is Imperative that coal mining cease at the Ulan operation no later than 2033 to allow for the necessary global decarbonisation for the management of climate extremes. S-52394964

The greenhouse gas emissions resulting from the burning of such coal are profound. S-52158218

Despite Glencore's commitment to net zero emissions by 2050, this proposal will continue to increase global carbon emissions. This does not support Australia making a difference in cutting emissions for a better future. S-52444706

Glencore, the owner and operator of the mine has made a commitment to net zero emissions by 2050. It is difficult to understand how it can meet this commitment when it plans to extract a further 25 million tonnes of coal, which will obviously make a significant contribution to the planet's greenhouse gases when burnt. Rather than extend the life of the mine, all efforts should be made to ensure its closure as soon as possible. Environmentally Concerned Citizens of Orange

The modification aims to extend underground longwall panels to extract a further 25 million tonnes of thermal coal and extend the mine life by two years to 2035. Despite Glencore's commitment to net zero emissions by 2050, this proposal will continue to increase global carbon emissions. …It is imperative that coal mining cease at the Ulan operation no later than 2033 to allow for the necessary global decarbonisation for the management of climate extremes. Lithgow Environment Group

As outlined in the Modification Report, Glencore has stated it is committed to supporting a transition to a low-carbon economy and has announced publicly that to assist in meeting the growing needs of a lower carbon economy, globally the company aims to prioritise its capital investment to grow production of commodities essential to the energy and mobility transition and to limit its global coal production capacity broadly to current levels.

During 2021 Glencore also strengthened its commitment to reducing its total emissions footprint (Scope 1, 2 and 3) which underpins its ambition to be a net-zero emissions company by 2050. Glencore has stated short, medium and long term climate change emission reduction group targets, including:

- a 15% reduction by the end of 2026
- a 50% reduction by the end of 2035 against a 2019 baseline
- a longer-term ambition of achieving net zero emissions by the end of 2050.

The Proposed Modification will extend the life of the existing operation providing production for a further two years. In this regard the Proposed Modification fits within the production cap as per Glencore's commitment as it is focused on sustaining current coal production in order to extend the life of the existing UCC and is not proposing an increase in production. This additional two years of production meets existing market demand for coal. The Proposed Modification and its direct and indirect emissions have been taken into consideration as part of Glencore's broader climate change commitments, and have been included in Glencore's decarbonisation pathway and its emissions reduction targets.

The Proposed Modification will not materially increase the national or State effort required to reach Australia's and NSW's 2030 greenhouse gas reduction targets. Further it is unlikely to limit Australia or NSW achieving their reduction targets. As part of implementing the Proposed Modification, UCC will seek to mitigate greenhouse gas emissions through ongoing energy efficiency initiatives and optimising productivity.

While it is acknowledged that the Proposed Modification will result in increased Scope 1 and Scope 2 greenhouse gas emissions which will contribute to climate change impacts, the Proposed Modification does not create the demand for the coal which it would produce. That is, if the coal is not mined at the UCC, the demand for this product would be met through coal mined elsewhere in the world which would still be burnt and would still produce CO2 emissions with the same corresponding climate change impacts to NSW, or arguably more emissions depending on the quality of the alternative coal source. The Scope 3 emissions associated with the combustion of coal mined by the Proposed Modification comprise approximately 99.4% of the total emissions of the Proposed Modification.

The continued expected demand for higher quality NSW coal is specifically acknowledged in the Strategic Statement on Coal Exploration and Mining in NSW (the Strategic Statement) (State of NSW, 2020a). Under the heading of 'The future of thermal coal in NSW', the Strategic Statement relevantly affirms:

> *In the short to medium term, coal mining for export will continue to have an important role to play in NSW. In our immediate region of the world, as elsewhere, there has been a reduction in demand caused by the economic impacts of COVID-19. However, in the medium term, demand is likely to remain relatively stable. Some developing countries in South East Asia and elsewhere are likely to increase their demand for thermal coal as they seek to provide access to electricity for their citizens. Under some scenarios, this could see the global demand for thermal coal sustained for the next two decades or more. The use of coal in the manufacture of steel (coking coal) is likely to be sustained longer as there are currently limited practical substitutes available.*
>
> *Ending or reducing NSW thermal coal exports while there is still strong long-term global demand would likely have little or no impact on global carbon emissions. Most coal consumers would be likely to source their coal from elsewhere, and much of this coal would be lower quality compared to NSW coal. Reducing demand for thermal coal in line with the Paris Agreement by progressively replacing coal-fired electricity with cleaner energy sources, as has been seen in Europe, will be more effective in reducing global emissions than reducing NSW coal supplies (p. 6).*

The above statement directly acknowledges the potential perverse climate change outcomes associated with restricting the production of higher calorific value coal in NSW (such as that which would be produced by the Proposed Modification) in that the projected global demand would see this NSW production substituted by lower quality coal produced elsewhere. Under such a scenario, it should also be noted that coal produced elsewhere in the world is less likely to be as well-regulated from an environmental perspective as mines in NSW.

Relevant to the Proposed Modification, the Strategic Statement (State of NSW 2020a) further provides under the heading of 'Our plan of action':

> *[T]he NSW Government will... recognise existing industry investment by continuing to consider responsible applications to extend the life of current coal mines, and by streamlining the process for exploring new areas and areas adjacent to current mining operations to deliver a better economic return to NSW (p. 8)*

The ongoing importance of coal to the NSW economy is specifically acknowledged in the Net Zero Plan Stage 1: 2020-2030 (State of NSW 2020b) where it states:

> *New South Wales' $36 billion mining sector is one of our biggest economic contributors, supplying both domestic and export markets with high quality, competitive resources. Mining will continue to be an important part of the economy into the future and it is important that the State's action on climate change does not undermine those businesses and the jobs and communities they support (p. 22).*

It is therefore clear that the current NSW climate change policy framework specifically acknowledges the importance of ongoing coal production in NSW, not just from the NSW economy perspective, but also from the perspective of the preference for using higher quality coal relative to lower value coal in terms of realistically meeting a global net zero target by 2050. Accordingly, the assertion that any new coal mining or extensions to existing operations should be refused on climate change grounds alone is inconsistent with both a responsible approach to global net zero targets and NSW Government policy.

Greenhouse Gas Management

Glencore state in their Ulan Coal Air Quality and Greenhouse Gas Management Plan that:

"It may be technically possible to install a thermal flow reversal reactor (TFRR) to oxidise low methane concentrations in the air flow exhausted from the underground ventilation system, however, an equivalent investment at a gassy site would generate a better greenhouse gas control outcome for GCAA and the environment."[3]

This Project would generate an additional 130,000 t CO_2-e of Scope 1 emissions, with the majority of these being generated by the ventilation system. If this Project is approved, the proponent must be required to install and operate a TFRR (or similar) system to abate these emissions. In their Response to Submissions, NSW DPE should require Glencore to explain – in detail – their considerations regarding whether VAM abatement would be possible and practical in the circumstances. They must also be required to explain – in detail – the mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements that the installation and operation of VAM abatement / TFRR would deliver at this mine. Where claims are made by Glencore about the viability and cost of VAM abatement, evidence should be provided to substantiate these claims. Lock the Gate

The UCC operates in an inherently low gas environment. The Scope 1 emissions generated annually from the current operations do not exceed 100 kt CO_2-e, the threshold required to be registered as a Safeguard facility under the *National Energy and Greenhouse Gases* (NGER) legislation. As such, methane recorded in the exhausting ventilation system is negligible (<0.01%), and is outside the sensitivity range of the analysers.

Reported emissions of CO_2 equivalent from the UCC are in fact CO_2 (typically <0.2% in total exhausted air), and not methane (CH_4). A VAM abatement system would not be effective for direct CO_2 emissions.

Social Cost of Carbon

One of Australia's most prominent economists – Nicki Hutley – says that the social cost of carbon (SCC), sometimes referred to as the 'damage cost' estimate, is considered perhaps "the single-most important economic concept in the economics of climate change." Professor Penny Sackett found earlier this year that the Social Cost of Carbon could be valued at about $600 AUD per Tco_2. On this basis, the social cost of the climate damage likely to arise just from this Project's additional 377,000 t CO_2-e in Scope 1 and 2 emissions would be approximately $226 M. This is a hefty price for the global community to pay just for Glencore to extract this coal. The social cost of the Scope 3 emissions would be additional to this cost. Lock the Gate

The assessment methodology and source for the social price of carbon is detailed in Section 2.7 of the Economic Impact Assessment (Appendix 7 to the Modification Report).

Consistent with the methodology set out in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the EIA Guidelines) released by the New South Wales (NSW) Government in December 2015 and *Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals*, the assessment of costs associated with greenhouse gas emissions is limited to Scope 1 and Scope 2 emissions only. Furthermore, as required by the EIA Guidelines, the cost benefit analysis undertaken is limited to the benefits and costs to NSW only.

Paying for Higher Global Greenhouse Gas Emissions and Climate Change Impacts

Most ordinary Australians are likely to be outraged to learn that proponents of new coal mining activities in NSW are only obliged to quantify the greenhouse gas emissions of their mine operations rather than the CO2 emissions from the coal they sell. But we say that although the quantum of exported emissions may not count in the calculation of Australian emissions, they do count in the calculation of net indirect costs in coping both with higher global temperatures and the extinction of Australian native species. Approval of the Project will undoubtedly aggravate both global warming and the probability of increased species extinctions. They are costs and those costs are effectively shifted to others and not enumerated in financial terms by the proponent. Yet the proponent is allowed to quantify the value of taxes, royalties, local jobs created and multiplier financial benefits to local economies while ignoring or denying the environmental costs. We say that approving the Project can only be justified if the mine's expansion can be shown to be manifestly in the public interest, i.e. that its stated benefits outweighs in a monetary and quality of life sense the high environmental price it demands.

The proponent is a foreign corporation, is primarily engaged in exporting coal to customers in other countries and almost all its profits, and current extraordinary superprofits, are remitted to foreign shareholders. It claims that in extending its mine, the existing infrastructure for extracting and processing the coal will be used, implying that additional local capital investment and additional employment will be minimal. The only significant benefit in a financial sense to the Australian public would be royalties and taxes payable to Australian governments for the coal exported and the extra multiplier benefits to the local economy in carrying on business for just two extra years. Thus, the extraordinary proposition implicit in the proponent's case is that species extinctions and increased monetary costs for Australian taxpayers in reducing greenhouse gas emissions and coping with climate change are justified by the predominantly foreign benefits. Furthermore, the benefits that might advantage Australians and their quality of life will be dwarfed by the costs shifted to them in coping with climate change and diminished biodiversity. In 2022, the routine expansion of coal mining is no longer considered in the public consciousness to be business as usual. The vast majority of Australians worry about the climate change crisis and the extinction crisis, and they expect governments to reduce rather than increase fossil fuel extraction in NSW. Accordingly, we urge that the UCC proposal be refused.
Birdlife Southern NSW

The Economic Impact Assessment has been completed in accordance with the EIA Guidelines.

Net benefits are measured through the evaluation of:

- direct benefits that accrue to NSW from the direct operation of the proposed mine including net producer surplus attributable to NSW, royalties payable and company tax attributable to NSW
- indirect benefits that are generated for parties that economically interact with the proposed mine including net economic benefits to landowners, NSW employees and NSW suppliers

- indirect costs, that is the social costs, generated by the proposed mine and borne by the NSW community including net environmental, social and transport-related costs, net public infrastructure costs and loss of surplus to other industries.

The Proposed Modification has been assessed to provide a net benefit to NSW, estimated to be $292.6 million in net present value (NPV) terms. The estimated net benefit is comprised of $144.9 million and $147.7 million in direct and indirect benefits respectively. Incremental indirect costs to NSW are estimated to be negligible.

These estimates are based on central case assumptions in relation to the Proposed Modification and replacement and sustaining capital expenditure of $88.93 million in NPV terms and a realised coal price ranging between $172.6 and $93.9 per tonne for thermal coal in real 2021 Australian Dollar terms.

The utilisation of existing infrastructure for extracting and processing coal at the UCC is considered a positive outcome as it utilises existing infrastructure rather than requiring new or additional infrastructure which may result in increased impacts, including additional greenhouse gas emissions. The suggested implication that additional local capital investment and additional employment will be minimal is not accurate. As outlined above, the additional 2 years of direct and indirect economic benefits will have a positive economic impact on the local and NSW economies.

5.1.2 Subsidence

Subsidence impacts

Mine subsidence is a consequence of longwall mining and this proposal for extensions will increase subsidence impact. An additional area of 993.2 ha will be impacted. This huge area is significant for all the reasons given above. The cumulative impact on significant sandstone cliff lines is untenable. Mudgee District Environment Group

An additional area of 993.2 ha will be impacted by mine subsidence including cumulative impact on significant sandstone cliff lines. Rylstone District Environment Society

An additional area of almost 1000 hectares will be impacted by mine subsidence including cumulative impact on significant sandstone cliff lines. S-52394964

A detailed Subsidence Assessment was prepared for the Proposed Modification (refer to Appendix 7 of the Modification Report). The approach to estimating the subsidence effects of the Proposed Modification was based on a review of previous site experience over more than 40 longwall panels at the UCC. This method is an empirical approach suitable for providing a reasonable estimate of the upper limit of key subsidence parameters.

The estimates incorporate improved understanding of subsidence behaviour based on the monitoring conducted since the original UCCO Project assessment was prepared. Recognition of natural variation is also considered.

Longwall mining is a form of underground coal mining where coal is removed from a selected mining horizon within the coal seam. Longwall panels are mined sequentially with adjacent panels separated by a barrier of coal that is permanently left behind called chain pillars. As longwall mining progresses underground the area behind the mining face, i.e. the goaf, increases. The roof behind the face is allowed to collapse into the void created by the mining equipment extracting the coal causing the overlying rock to fracture and settle, i.e. subside. This settlement progresses up through the overlying strata resulting in subsidence of the ground surface immediately above and surrounding the longwall panels.

Subsidence impact assessment involves using the subsidence predictions to forecast the level of impact on natural and human-made surface features within the subsidence affectation area. A comprehensive review of all relevant natural features, archaeological sites and items of surface infrastructure potentially impacted by subsidence has been completed with detailed subsidence predictions and impact assessment provided for each aspect.

Overall subsidence impacts are expected to be consistent with or less than the predictions for the approved operations, subsidence performance measures outlined in PA 08_0184, and the monitoring experience since PA 08_0184 was granted regardless of the mine plan option.

With specific reference to steep slopes, sandstone and cliff formations, the Subsidence Assessment states that impacts are expected to be consistent with original UCCO Project forecasts, subsidence performance measures outlined in the conditions of PA 08_0184 and the monitoring experience for mining since the UCCO Project was approved.

Previous subsidence impacts and ability to accurately predict subsidence impacts

In addition, it is of great concern that the subsidence modelling submitted and accepted by the Department has proven to be totally inaccurate and flawed. The sad reality that the subsidence and surface cracking resultant from extraction beneath the property known as "Woodbury" has proven that the modelling is totally erroneous and flawed. That property has suffered from at least one SINK HOLE and the subsidence cracking to the surface has by far exceeded the modelling. While the predicted surface cracking was less than 200 mm wide, it has in fact exceeded 1.4 m in width. S-52159208

Subsidence behaviour observed at the UCC has been generally consistent with expected levels, as reported by SCT Pty Ltd in the Modification Report (refer Section 6.3 and Appendix 7 of the Modification Report).

The approach to estimating subsidence effects was based on a review of previous experience over more than 40 longwall panels at the UCC. This method is an empirical approach suitable for providing a reasonable estimate of the upper limit of key subsidence parameters.

Maximum vertical subsidence in a single seam situation can be naturally variable by approximately 15% for any given panel geometry and overburden depth (SCT, 2022). Although actual vertical subsidence is expected to be generally less than the upper limits, upper limit estimates of subsidence movements are considered appropriate to use for impact assessment purposes. Upper limit estimates of subsidence movements have been assessed in the Subsidence Assessment for the Proposed Modification.

The possibility of unusual, anomalous or unconventional subsidence behaviour such as steps, compression overrides or ripples and valley closure is recognised. Higher values of strain and tilt, and sharp variations of vertical displacement are possible in the vicinity of localised features.

In a bushland or agricultural environment such as exists within the additional underground mining area, any variations in the maximum values of subsidence parameters measured from those forecast is unlikely to significantly affect the impacts observed.

The subsidence related incident (referred to as the 'sink hole' in the submission) occurred in 2020, with the development of an erosion hole within a subsidence crack that was located within a drainage flowline. The erosion hole developed following significant rainfall that occurred between 17 February and 4 April 2020 (totalling approximately 314 mm) and this resulted in collapse of the erosion hole. The erosion hole was reported to the Resource Regulator on 17 April 2020 and was repaired immediately. Inspection of the area by the Subsidence Engineer confirmed that the impact was erosion related and not greater than predicted subsidence.

5.1.3 Water Resources

Loss of surface water resources

This Ulan underground mining extension, will also deplete, damage and destroy the catchments of the Goulburn River. You well know the damage, so I don't need to spell it out, including the riverine areas and overall water resource, for the surrounding natural areas, towns and the rural sector. S-52369207

"Surface subsidence effects have the potential to influence surface water flows." Tributaries of both the Goulburn and Talbragar Rivers are above the proposed underground mining site. The applicant states that they will lose even more base flows for thousands of years to come. Bathurst Community Climate Action Network

The proposed additional underground mining area lies within the Mona Creek catchment which is part of the Talbragar River system. The Talbragar River system drains west to the Macquarie River catchment and eventually into the Murray-Darling River System. The Goulburn River catchment is separated from the Talbragar River catchment by the Great Dividing Range, with the Goulburn River draining east into the Hunter River catchment. As a result, the Proposed Modification will have no impacts on surface water within the Goulburn River catchment.

The predicted impacts of the Proposed Modification on surface water are described in Section 6.5.3 of the Modification Report. The key findings of the surface water impact assessment included:

- No change to flow regimes in Mona Creek and negligible changes to flow regimes in the Talbragar River.
- Impacts to flood depths and velocities would not extend beyond the predicted subsidence affectation area and would not impact on current land uses.
- Changes to patterns of remnant ponding as a result of subsidence will be typically consistent with impacts approved under current operations.

- Increases to flood velocities resulting from subsidence could potentially result in an increase to the erosive potential in the channel of Mona Creek, although this would only occur within landholdings owned by UCMPL and monitoring and mitigation measures are proposed to address this risk.
- Negligible impact on ecosystems and downstream users.
- No appreciable changes to the quantity or quality of surface water as a result of changes to surface infrastructure.

Similarly, the groundwater impact assessment found that no additional impacts on baseflows in the Goulburn River system are predicted.

Loss of baseflows and changes to flow regimes

There of course will be other negative impacts of the proposed development including the depletion of the groundwater in the area … S-52437711

Groundwater drawdown from mining operations will result in the loss of base flows of water to both the Goulburn River and the Talbragar River further away to the west. S-52524456

The Groundwater report identifies that the volume of groundwater being extracted from the Goulburn catchment far exceeds that allowed under the Water Sharing Plan. S-52614212

7. Cumulative groundwater drawdown will cause loss of additional base flows to both the Goulburn River to the east and the Talbragar River to the west for up to 3,000 years. Rylstone District Environment Society, Lithgow Environment Group, Healthy Rivers Dubbo

This proposal for additional underground mining will cause additional loss to the base flows of both East (Goulburn River) and West (Talbragar River) flowing rivers. The cumulative drawdown will impact for 3000 years. This is unacceptable and highly inequitable for future generations. Mudgee District Environment Group

We believe the ongoing loss of baseflows to the river is the major cause for this increased impact. The groundwater model does not adequately predict the loss of flows during drought. During extreme wet weather events the addition of mine discharge water to high flows lengthens the period of flood levels and increases the access issues within properties and on public roads. Wollar Progress Association

The release of constant flow heights into the Goulburn River at 30 ML/d has altered the natural flow regimes to such an extent that the river now behaves as a regulated water source.

The proposal to continue drawing down groundwater from the landscape, into the mine workings, to then be released as treated water into the Goulburn River has completely destroyed the natural water balance on the river headwaters.

The prediction that additional drawdown from the proposed underground mining extension could affect base flows for up to 3,000 years is alarming and cannot be approved on the basis of negligence. Wollar Progress Association

Section 8.3 of the GIA (refer to Appendix 8 of the Modification Report) described the predicted baseflow impacts as a result of the Proposed Modification. Modelling predicted that the peak impact on the baseflow for the Talbragar River system (and its tributaries) would be a 7.6% increase (approximately 2.2 ML/year or 0.006 ML/day) in intercepted baseflow over the currently approved level. The total baseflow for the Talbragar River and its tributaries is predicted to be over 3,726 ML/year (10.2 ML/day), making the predicted impact from the Proposed Modification comparatively small to imperceptible (0.06% of total baseflow). The Goulburn River system is not expected to be impacted by the Proposed Modification given its location, and no additional impacts on baseflows in this system are predicted.

Indirect take from the approved operations is predicted to peak for the Upper Goulburn River water source at 122.6 ML/year. The predictions are consistent with the range of baseflow losses/gains that could be ascertained using upstream and downstream gauging station results. Simulation of the Proposed Modification mine plan does not increase the take from the Goulburn River system.

The model setup for the GIA included the Moolarben mine, allowing the model to inherently assess the cumulative impacts of both the existing mining operations (UCC and Moolarben) and the Proposed Modification. Section 8.6 of the GIA (refer to Appendix 8 of the Modification Report) described the predicted cumulative impacts of mining on groundwater. Based on the results of groundwater modelling, there is minimal interaction between the Moolarben mine and the Proposed Modification. The Proposed Modification areas are located on the north-western part of the Ulan Underground and Ulan West footprints and are more than 10 km from Moolarben No. 4 underground mine. Given these conditions there is no potential for significant cumulative impacts associated with the Proposed Modification.

Groundwater modelling has predicted some changes in the groundwater interception of the underground mining area associated with the proposed additional mining area. This includes an increase in the groundwater drawdown area, reflecting the increase in mining area. The assessment has found, however, that UCMPL currently holds adequate groundwater licence allocations to account for any increases in groundwater take associated with the additional underground mining.

The UCC has historically operated in surplus (i.e. water make exceeding site water demands) with significant groundwater inflows to the underground mines. As a result, there has been an emphasis on irrigation, water treatment in the existing water treatment facilities (WTFs) and licensed discharge. Water in excess of operational needs is discharged from licenced discharge points. Discharges are undertaken in accordance with PA 08_0184 and EPL 394. There is no change to discharge limits or practices as a result of the Proposed Modification.

It is assumed that the reference to 3,000 years in the submission is in reference to maximum and long term residual drawdown at private bores (as outlined in the GIA). There are an additional 11 private bores that are predicted to be impacted by 2 or more metres post mining, however all of the potentially impacted bores are predicted to recover higher than the pre-mining water levels into the distant future (refer to Section 8.2 of the GIA). Management measures are either already in place, or are being progressed, to address impacts to these bores, including make good provisions.

Drawdown from mining will lower groundwater levels and will, in places, reduce flow to alluvial sediments and baseflow to surface drainages. As outlined in Section 6.5.3 of the Modification Report, flow regimes in the river and creek systems which are expected to be impacted by the Proposed Modification were modelled to assess the impact of any potential reduction in baseflows.

For two of the modelled locations on the Talbragar River (i.e. SW09 and Dunedoo), the model indicates no increase to the estimated frequency of no flow periods and no increase in average annual dry days (defined as flows less than 0.1 ML/day) as a result of the Proposed Modification. For the third modelled location on the Talbragar River (i.e. Elong Elong), the model indicates negligible impact to the estimated frequency of no flow periods and no increase in average annual dry days as a result of the Proposed Modification.

As a result of the predicted subsidence impacts there are no predicted changes to catchment areas in Mona Creek or baseflow to the creek system (refer to Appendix 8 of the Modification Report). As such, the Proposed Modification is not expected to have any impact on streamflow sequences in Mona Creek.

Impacts on surface water quality

The proponent has not identified measures which will address the very high risk of soil erosion. With increasing heavy rainfall events, soil erosion just results in deposition of soil particles in the Murray Darling River system. Associated with erosion events is the incidence of turbidity and conductivity which is transferred into downstream flows. The proponent has not identified specific measures to control water pollution from the area subjected to underground mining. This is proposed to be transferred to the responsibility of future land owners. As subsidence that will take place many years post closure of the mine, erosion prevention is a long term issue. The proponent has not identified funding measures that will be sufficient to implement long term corrective measures to prevent soil erosion and water pollution. S-52614212

As detailed in **Appendix 3**, all surface disturbance works at UCMPL comply with the requirements of the Ulan Coal Erosion and Sediment Control Plan (ESCP) to manage runoff, water segregation, scouring, etc. The ESCP forms part of the Water Management Plan (WMP) and has been prepared to meet the requirements of PA 08_0184 and Environment Protection Licence (EPL) 394. The management and construction of all proposed surface infrastructure will be undertaken using the same methods and controls as are currently in place and specified in the ESCP.

The ESCP outlines the erosion and sediment control measures to be implemented at the UCC to mitigate the impacts of the proposed development on nearby watercourses and the surrounding environment. This includes activities associated with the management of subsidence resulting from underground mining. Standard erosion and sediment control techniques are to be in general accordance with the requirements of *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 2004) and *Volumes 2A, 2C, 2D and 2E* (DECC, 2008) (the Blue Book). A summary of the general ESC principles employed by UCMPL to limit erosion on site are outlined in Section 3.2 of the ESCP. Further site-specific ESC strategies and structures that will be utilised to control erosion and sedimentation are detailed in Section 3.3 and Section 3.4 of the ESCP respectively. The ESCP can be accessed online at: https://www.glencore.com.au/.rest/api/v1/documents/c440356f4523bf567f2c4db64e27c300/Erosion+and+Sediment+Control+Plan+-+Jan+2021.pdf

Water licensing

It is not clear that adequate water licences have been gained to cover additional drawdown of the NSW Murray Darling Basin Porous Rock Groundwater Sources 2020 – Sydney Basin MDB. The assessment report predicts an additional drawdown of up to 8,339 ML/yr from this water source. It is also not clear that some of this impact could be on base flows to the Goulburn River. Central West Environment Council

Appendix 3 provides a summary of water licences held by UCMPL and the requirements for the Proposed Modification and approved operations. UCMPL holds licences for 6,950 units of water allocation in the NSW Murray Darling Basin Porous Rock Groundwater Sources 2020 – Sydney Basin MDB (Other) Management Zone. Units are currently assigned a value of 1.25 ML/ unit meaning the current licenced volume is 8,687.5 ML and exceeds the predicted peak take.

Characterisation and impacts on the Drip

The iconic groundwater dependent ecosystem on the Goulburn River known as The Drip is incorrectly described with no recognition of the connection to the regional groundwater system. S-52226213, S-52444706, S-52445207, S-52447208, Rylstone District Environment Society, Lithgow Environment Group

But the main reason why this project shouldn't go ahead is WATER. Coal mining uses a lot of water so if we want The Drip to remain an oasis, we can't accept this proposal because the source of the water feeding The Drip comes from the regional groundwater system, in particular from the Ulan coal mining area. Water matters so much in this part of the world. Just think of the next big drought just round the corner. It will come, probably even more ferociously. S-52300208

We strongly object to the ongoing misinformation promulgated by Glencore that 'The Drip' is not connected to the regional groundwater system. Ongoing impacts to all ecosystems connected to the Goulburn River and the downstream community who depend on it for stock and domestic rights have not been adequately assessed for the proposal. Wollar Progress Association

Several members of BCCAN have walked at the pretty locality, The Drip. The Goulburn River flows through here. The Drip will suffer from lower levels of surface water flowing through it, even though Glencore believes no groundwater inflows, which supply the effect of the dripping, will change. (Measuring on Fig 1, page 8 of Scoping Letter, it seems that underground mining will come to about 2 km of being under The Drip carpark.) We express our concern. Bathurst Community Climate Action Network

The Drip is a natural feature that hosts a localised GDE of vegetation growing on a sandstone cliff face, located over 10 km south-east of the Proposed Modification underground mining area and on the opposite side of the UCC.

A review of existing literature along with historic and current data captured at The Drip was conducted by AGE (refer to **Appendix 3**). The review concluded that the most likely conceptualisation of The Drip is that it is the seepage face of a local aquifer in the Triassic Narrabeen Group isolated on a layer of relatively low-permeability ironstone. It is recharged by infiltrating rainfall and does not appear to be hydraulically connected to the regional aquifer in the basal portion of the Triassic sediments and Permian coal measures.

Section 7.2 of the GIA confirms that there is no drawdown predicted at The Drip due to mining at UCC, in either approved or proposed scenarios. Refer to **Appendix 3** for additional detail.

Cumulative groundwater impacts

The cumulative impacts on an already stressed groundwater system of further extensions to underground mining is unacceptable and based on short term reasoning. MOD6 will extend the depressurisation of groundwater system into new areas, further intercepting and permanently distorting the groundwater network. The cumulative groundwater drawdown will cause loss of additional base flows to both the Goulburn River to the east and the Talbragar River to the west. S-52499972

Cumulative groundwater drawdown will cause loss of additional base flows to both the Goulburn River to the east and the Talbragar River to the west for up to 3,000 years. S-52226213, S-52444706, S-52445207, S-52447208

I also draw your attention to the cumulative groundwater drawdown which will cause loss of even more base flows to the Talbragar and Goulburn Rivers for evah [sic]! S-52503214

The cumulative impact of three large coal mines in the area has already led to a permanent loss of groundwater in the headwaters of the Goulburn and Talbragar Rivers. Healthy Rivers Dubbo

The cumulative loss of base flows to the Talbragar River from the Ulan West underground mining operations and subsequent modifications has not been adequately reported or assessed in regard to the additional interception proposed in the Mod 6 underground extension. Inland Rivers Network

The Proposed Modification is located in an area that has a long history of coal mining, with the Project Area itself subject to mining activity since the 1920s. Accordingly, the local groundwater environment has been impacted by previous mining operations.

The GIA considers and assessed cumulative groundwater impacts associated with the Proposed Modification, the approved operations and the neighbouring Moolarben mine. The groundwater model prepared by AGE for the Proposed Modification, including the calibration and sensitivity analysis, was peer-reviewed by EMM Consulting (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' (refer to Appendix 8 of the Modification Report).

Section 8.6 of the GIA (refer to Appendix 8 of the Modification Report) described the predicted cumulative impacts of mining on groundwater. Based on the results of groundwater modelling, there is minimal interaction between the Moolarben mine and the Proposed Modification. The Proposed Modification areas are located on the north-western part of the Ulan Underground and Ulan West footprints and are more than 10 km from Moolarben No. 4 underground mine. Given these conditions there is no potential for significant cumulative impacts associated with the Proposed Modification.

Water resource impacts on flora and fauna

The flora and fauna habitat in the region relies on the availability of water resources, both above and underground. The risks and impacts to good water flow to the Goulburn River and associated areas have not been adequately investigated. Water for Rivers

No high priority Groundwater Dependent Ecosystems (GDEs) have been identified within the UCC. Riparian vegetation present in areas of UCC is not anticipated to be impacted by the Proposed Modification. The only creek system potentially impacted by the Proposed Modification is Mona Creek where riparian vegetation has largely been cleared for agricultural purposes in the areas where longwall panels are proposed. Cockabutta Creek will not be impacted by the Proposed Modification and baseflow impacts to the Talbragar River are unlikely to be observable.

5.1.4 Biodiversity

Loss of biodiversity

Expansions to the current mine will have significant biodiversity impacts. The clearing of a significant area of native vegetation that is planned will result in a significant habitat loss for vulnerable species of fauna. This loss of native vegetation cannot be replaced, repaired or effectively offset. S-52158218

Loss of 24.7 ha of woodland vegetation including 9.5 ha of critically endangered White Box – Yellow Box – Blakely's Red Gum Woodland ecological community providing habitat for numerous threatened fauna and flora species. S-52226213, S-52444706, S-52445207, S-52447208, Rylstone District Environment Society, Lithgow Environment Group

Removal and disturbance of habitat for critically endangered Regent Honeyeater, Swift Parrot; endangered Koala and Long-eared Pied Bat and numerous other threatened fauna species. S-52226213, S-52444706, S-52394964, S-52445207, S-52447208, S-52447208, Rylstone District Environment Society, Lithgow Environment Group

In addition to its contribution to our carbon emissions, the land clearing necessary for the extension will result in more carbon emissions and the destruction and removal of significant wildlife habitat. Clearing for the mine would result in the loss of 24.7 ha of native vegetation, including 9.5 ha of critically endangered White Box, Yellow Box, Blakely's Red Gum Woodland ecological community, which provides habitat for numerous threatened flora and fauna communities. Such species include the critically endangered Regent Honeyeater, Swift Parrot, endangered Koala, and Long Eared Pied Bat. Environmentally Concerned Citizens of Orange

The BDAR was completed for the Proposed Modification using the *NSW Biodiversity Assessment Method* (DPIE 2020) (BAM 2020) in accordance with the *Biodiversity Conservation Act 2016* (BC Act).

Whilst UCMPL has endeavoured to minimise impacts on biodiversity, not all impact could be avoided by the proposed design and a detailed assessment of the impacts was undertaken. As outlined in **Section 3.2**, the direct impacts from the Proposed Modification have been reduced. The Proposed Modification will result in direct impacts on biodiversity values within the Development Footprint (23 ha) including the loss of native vegetation and fauna habitats as a result of clearing works for surface, including 6.8 ha of the Commonwealth listed White box – Yellow Box – Blakely's Red Gum Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC).

UCMPL is committed to delivering a biodiversity offset strategy that appropriately compensates for the unavoidable loss of ecological values as a result of the Proposed Modification. Where possible, UCMPL has altered the Proposed Modification to avoid and minimise ecological impacts in the planning stage, and a range of impact mitigation strategies have been included to mitigate the impact on ecological values prior to the consideration of offsetting requirements.

Glencore and UCMPL have a strong record in preparing and implementing biodiversity offset strategies that address significant biodiversity matters and adequately counterbalance impacts on them. To date, Glencore has prepared and submitted ten Biodiversity Stewardship Site applications to the BCT, seeking to conserve and manage upwards of 3,000 ha of land in the Hunter Region. UCMPL, as a subsidiary of Glencore, is committed to delivering a biodiversity offset strategy that appropriately compensates for the unavoidable loss of ecological values as a result of the Proposed Modification. The offset strategy will be implemented in consideration of the process outlined in the BC Act and EPBC Act and the final composition of the offset strategy may evolve as the Proposed Modification progresses. As the Proposed Modification has been determined a 'controlled action' under the EPBC Act, the subsequent biodiversity offset strategy will be assessed under the Bilateral Agreement between NSW and the Commonwealth. Considerations will be made so the offset strategy suitably addresses residual impacts on both NSW and Commonwealth relevant biodiversity matters.

UCMPL is currently considering the merits of all options available under the Biodiversity Offset Scheme (BOS) to satisfy the offsetting requirements for the Proposed Modification. The offset options available under the BC Act and BC Regulation include:

- land based offsets through the establishment of new Stewardship Sites or by retiring credits from existing Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

The biodiversity offset strategy will be developed in consultation with the BCS and DPE and will be based on the credits required to be retired to offset the impacts of the Proposed Modification, pending confirmation of final infrastructure footprints.

It is important to note that under the NSW BOS, there is an established approach to like-for-like offsetting, such that the biodiversity matters being impacted by the Proposed Modification are offset with similar biodiversity values. This ensures that the offsetting approach contributes to the ongoing viability of the specific matter impacted, whether it is a species, community or PCT listed under the BC Act or the EPBC Act.

Impacts on Regent Honeyeater Breeding Habitat

The ecological studies the proponent conducted confirmed that breeding habitat suitable for the Regent Honeyeater exists across the affected land and concluded that the Project will result in ecosystem habitat loss for 22 threatened fauna species including the Koala, the Squirrel Glider, the Large-eared Pied Bat, and of particular interest to BirdLife Southern NSW, the Regent Honeyeater.

The Regent Honeyeater is listed as Critically Endangered at both state and federal level, with as few as 350 individuals remaining in the wild across its range. Modelling by BirdLife Australia suggests that up to 50% of contemporary Regent Honeyeater foraging and breeding habitat was burnt in the 2019/20 bushfires and therefore protecting remaining unburnt breeding habitat is of the highest conservation priority. Given that it is near extinction, any breeding habitat, including potential habitat, is crucial for its survival under the National Recovery Plan for the species. There are only a handful of remaining known breeding sites for Regent Honeyeaters. Destruction or degradation of any of those sites, or other sites suitable for it to breed in, would have dire con sequences for the species as a whole. It is unacceptable and inconsistent with the National Recovery Plan for any avoidable loss or degradation of habitat to occur. It is also incongruous with the time and money that the federal and NSW governments have invested into the recovery program, including the Regent Honeyeater Captive Breeding and Release program. This matter is particularly important to BLSNSW as our volunteers have donated a significant amount of time for more than 25 years in monitoring and in habitat restoration activities. Birdlife Southern NSW

The regent honeyeater was not recorded within the Proposed Modification area despite thorough fauna surveys undertaken in accordance with the seasonal requirements for this species. The regent honeyeater has not previously been recorded at the UCC despite extensive surveys being undertaken over a long period of time, including annual, targeted monitoring for over 10 years.

The regent honeyeater is considered to have potential to occur in areas of appropriate winter-flowering eucalypt habitat, as defined for the national recovery plans for the species (Regent Honeyeater Recovery Plan CoA 2016).

The biodiversity assessment for the Proposed Modification did not confirm that breeding habitat suitable for the regent honeyeater exists across the Project Area. The Proposed Modification area does not occur within the four known breeding areas for the species where it is regularly recorded, namely Bundarra-Barraba area of NSW, the Capertee Valley in NSW, the lower Hunter Valley in NSW and the Chiltern area of north-east Victoria. It does, however, occur within approximately 130 km of the Capertee Valley breeding area.

In addition, the development footprint is not located within an 'Important Area' for the regent honeyeater as identified in the BAM Important Area Maps.

The Proposed Modification will result in the local reduction in regent honeyeater foraging habitat (up to 1.0 ha) due to vegetation clearing within direct impact areas for surface infrastructure. This impact will occur during construction and operational phases. Based on the current subsidence predictions, and evidence from ecological monitoring of previously mined longwalls at the UCC, there are not predicted to be any material indirect impacts on this species as a result of the predicted subsidence impacts.

The biodiversity assessment concluded that the Proposed Modification is unlikely to result in a significant impact on the population of the regent honeyeater. The area proposed to be disturbed is relatively minor and the regent honeyeater has not been recorded utilising the potential habitat within the Proposed Modification area or in the immediate surrounds.

Adequacy of offsetting

Furthermore offsetting has long been discredited and offers no real compensation for the loss of country and habitat from coal mining activities. The only means of protecting this delicate environment is 'avoidance'. S-52369207

Clearing Critically Endangered Ecological Communities should not be permitted. There is no adequate replacement or offset available. The consequence is a net loss of that vegetation community. Mudgee District Environment Group

Creating offset credits is not adequate: the Box Gum Woodland is Critically Endangered because there are very few equivalent identical communities, and these should be preserved anyway. We cannot go on pretending that vegetation communities can be both critically endangered and also in such abundance that we can find identical communities waiting around to be conserved. Climate Change Balmain-Rozelle

The proponent implicitly advances the argument that an acceptable critically endangered species is to offer formulaic offsets. However, offsets are rarely an appropriate response to proposed biodiversity loss and especially for habitat critical for the survival of a near extinct species, such as the Regent Honeyeater. Given their scanty numbers and limited distribution, there is no evidence that habitat suitable for Regent Honeyeaters in the Project-affected area can be successfully offset. Any offsets pursued would be unlikely to provide measurable benefits for either local affected populations or for remnant populations still hanging on elsewhere. Birdlife Southern NSW

In 2022, the need to reject offsets as a solution to threats to habitats of critically endangered species is demonstrated by statements of NSW and federal environment ministers which constitute a clarion call for the taking of urgent action to prevent more species extinctions. Urgent means now, not in the fullness of time required by offsets timetables. A goal of zero extinctions is unattainable if governments continue to classify the expansion of the coal industry as critical infrastructure deserving of encouragement and thereby authorising more habitat destruction, as this Project undoubtedly does. We believe that in view of the re-energised contemporary political interest in effectively addressing the extinction crisis, a well-informed environment minister would struggle to be satisfied that the offsets proposed could realistically reduce rather than accelerate extinction risks. Consequently, we urge that the Project be refused on the ground that the proposed clearing of at least 27.4 hectares of native bushland in any configuration would accelerate rather than abate the risk of the Regent Honeyeater and other species becoming extinct. Birdlife Southern NSW

UCMPL is currently considering the merits of all options available under the NSW Biodiversity Offset Scheme (BOS) to satisfy the offsetting requirements for the Proposed Modification.

The NSW BOS is a world-leading scheme that aims to ensure no net loss of biodiversity from development by requiring that any residual impact on biodiversity from a development must be replaced by a gain in biodiversity elsewhere. This is achieved by developers purchasing credits offered by landholders on the credit market. Landholders generate these credits by agreeing to secure and manage an area of their land to improve biodiversity under an in-perpetuity Biodiversity Stewardship Agreement. Credit sales provide funding for ongoing management activities on the land, such as weed and pest management, fire management, and restoration works (NSW DPE, 2023).

The biodiversity impact and gain are calculated in a transparent and scientifically robust way. The NSW Government is committed to the continual improvement of the BOS to help ensure it delivers effective and lasting environmental and economic outcomes for the communities of NSW.

The offset options available under the BC Act and BC Regulation include:

- land based offsets through the establishment of new Stewardship Sites or by retiring credits from existing Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

The biodiversity offset strategy for the Proposed Modification will be developed in consultation with the BCS and DPE and will be based on the credits required to be retired to offset the impacts of the Proposed Modification, pending confirmation of final infrastructure footprints.

It is important to note that under the NSW BOS, there is an established approach to like-for-like offsetting, such that the biodiversity matters being impacted by the Proposed Modification are offset with similar biodiversity values. This ensures that the offsetting approach contributes to the ongoing viability of the specific matter impacted, whether it is a species, community or PCT listed under the BC Act or the EPBC Act.

5.1.5 Cultural Heritage

Loss of cultural heritage

There has already been loss of cultural heritage values in the landscape due to large-scale mining activities. The cumulative effect of this needs to be acknowledged and any further loss prevented. This area is significant as it is associated with the Goulburn River trade routes and a known corroboree site at Cooks Gap. The Traditional Pathways of the Aboriginal people are intrinsically tied to the landscape. Changes to the visual landscape impact negatively on their connection to the land. Mudgee District Environment Group

Many first nations cultural sites are also contained within the area for planned extension and the loss of such sites needs to be considered seriously. S-52158218

An additional 48 sites with First Nations cultural values will be impacted. The cumulative loss of cultural heritage across the Ulan Mine is highly significant. S-52226213, S-52444706, S-52445207, S-52447208, Rylstone District Environment Society, Lithgow Environment Group

Locally, the impacts of the mining operation have already impinged directly on the landscape, including adjacent and nearby land of high cultural significance reserved also to protect wildlife under the New South Wales National Parks and Wildlife Act. Any further expansion will only compound these adverse impacts. S-52524710

The impact of three adjacent large mining operations has had a significant impact on the many important sites indicating Aboriginal occupation and spiritual connection to the Goulburn River valley. The impact of subsidence on important rock shelters and disturbance of the landscape in general has caused a major disruption to the connection to country for traditional owners. This enormous loss of cultural value has not been recognised and cannot continue. Central West Environment Council

The impacts of the proposed Modification on aboriginal heritage can be identified as either:

- direct impacts from additional surface infrastructure, or
- indirect impacts to the ground surface through underground mining induced subsidence.

In terms of direct impacts, the Aboriginal Cultural Heritage Assessment (ACHA) (refer to Appendix 12 of the Modification Report) undertaken by South East Archaeology (SEA) identified five Aboriginal artefact scatter sites within the proposed infrastructure areas. Of these, one site would be subject to total impact under the Proposed Modification (ID# 804) and the other four sites would only be partially impacted, including impacts to relatively small portions of the sites. Site ID# 804 is located within the footprint of the proposed ventilation shaft at the northern end of Ulan West Longwall 8A (refer to **Figure 1.3**). While the location of this infrastructure is generally determined by the underground mine plan, it is acknowledged that final location of infrastructure is subject to further detailed mine planning, and may be subject to change as part of implementing the mine plan. Any refinements to infrastructure locations will seek to avoid archaeological sites as far as practicable. Should avoidance not be possible, the management strategy recommended by the ACHA for site ID# 804 is for surface collection if future impacts cannot be avoided. This strategy would assist in mitigating the direct and total impacts anticipated to occur from the Proposed Modification to this site of heritage significance. The ACHA states that excavation of site ID# 804 is not warranted, as the site is not anticipated to host a deposit of research value.

In terms of indirect impacts, the assessment identified 48 Aboriginal sites/PADs that are subject to a material increase in *potential* subsidence impacts as a result of the Proposed Modification, that is, where the potential impacts from subsidence have moved a site above the 10% threshold of probability of perceptible impacts (consistent with the assessments conducted for the original Project Approval and monitoring observations to date). This does not constitute a definitive impact or loss, but rather an increase in the *potential* for subsidence impacts. Of the 48 sites, approximately 69% have been assessed as being of low heritage significance in relation to criteria derived from the International Council on Monuments and Sites (ICOMOS) *Burra Charter*.

Notwithstanding this, appropriate management strategies for all potentially impacted sites have been identified, consistent with the existing Heritage Management Plan (HMP) and Project Approval. In selecting suitable management strategies, a key consideration has been the recognition that Aboriginal heritage is of primary importance to the Aboriginal community and that decisions about the management of Aboriginal heritage should be made in consultation with the relevant Aboriginal stakeholders. This has occurred over the past four decades at UCMPL, through the conduct of numerous heritage investigations, formulation and approval of the HMP, and subsequent actions completed under the auspices of the HMP, and has continued to occur in relation to the Proposed Modification.

Another key consideration in selecting suitable strategies is the comprehensive existing approved HMP, which provides detailed guidance for the management of heritage evidence within the existing Project Approval Area. The HMP, developed in consultation with and approved by Aboriginal stakeholders and regulators, provides sufficient policies and actions for the management of Aboriginal heritage with respect to the Proposed Modification, both in the areas within the existing Project Approval Area, and the Proposed Modification area.

It is noted that the Wellington Valley Wiradjuri Aboriginal Corporation Elders, Members and Knowledge Holders provided a submission in relation to the Modification Report stating that they '*agree to the Proposed Modification'*. Heritage NSW has also stated it '*agrees with the management recommendations outlined in the assessment provided, and as such, has no additional comments with respect to the proposed modification proceeding'* (refer to **Section 4.8**).

Adequacy of Aboriginal cultural heritage survey

There has been no official audit of the sacred sites and heritage objects in the area. Water for Rivers

Many archaeological surveys and excavations have been previously undertaken within the UCMPL lease areas and surrounding locality, principally in relation to environmental impact assessments. This body of research has identified numerous archaeological sites and provides a broad understanding of archaeological site patterning in the local area.

Past heritage investigations at UCMPL have led to the recording of the Aboriginal sites/Potential Archaeological Deposits (PADs) in the UCMPL Aboriginal Site Database, which documents all known Aboriginal sites within the UCCO Project Area.

The ACHA (refer to Appendix 12 of the Modification Report) includes an overview of the extensive history of past archaeological research undertaken within the Proposed Modification investigation area, a summary of key information on investigation types and area, and the number of recorded archaeological sites. The ACHA was prepared in consultation with Registered Aboriginal Parties (RAPs) and with reference to the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (Department of Environment, Climate Change and Water (DECCW), 2010a), Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage (OEH), 2011) and Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010b), along with the earlier Aboriginal Heritage Standards and Guidelines Kit (Department of Environment and Conservation, 1997) referenced in the HMP.

It is noted that the Wellington Valley Wiradjuri Aboriginal Corporation elders, Members and Knowledge Holders provided a submission in relation to the Modification Report stating that they agree to the Proposed Modification and Heritage NSW has also been consulted and agrees with the management recommendations outlined in the assessment provided, and as such, has no additional comments with respect to the Proposed Modification proceeding (refer to **Section 4.8**).

5.1.6 Impacts on the Community

Noise impacts

The concern with this project is noise from the proposed ventilation fans. Of particular concern is the very low ambient noise levels in the low 20Db(A)s which makes ventilation fans at 35Db(A) or more outstanding. While the predicted noise levels may comply with NpfI, this policy has diminished protection of the acoustic environment in quiet rural areas. Although the proponent claims that noise from the fans will not be tonal nor low frequency, this claim may not be achieved in practice particularly under inversion conditions. S-52614212

The Noise Impact Assessment for the Proposed Modification was undertaken in accordance with the requirements of the NSW *Noise Policy for Industry* (Environment Protection Authority (EPA), 2017) (NpfI), *Interim Construction Noise Guideline* (Department of Planning and Environment, 2009) (ICNG) and in consideration of the *Voluntary Land Acquisition and Mitigation Policy* (NSW Government, 2018) (VLAMP) and the EPA's *Draft Construction Noise Guideline* (2020).

The operational noise assessment results indicate that the operational phase scenarios assessed (which consider the sequential operation of ventilation fans) will comply with the noise limits/criteria at all receiver locations during both standard and noise-enhancing meteorological conditions.

Specifically, the assessment of low frequency and tonal noise components was undertaken in accordance with the methodology set out in Fact Sheet C of the NpfI. Modelling did not identify tonal components that would exceed the NpfI low-frequency reference spectrum or the one-third octave band analysis for tonal characteristics. A low-frequency penalty was also not applicable as the difference between the predicted C- and A-weighted noise levels was less than 15 Db. Therefore, no further assessment of low frequency or tonal noise was required.

Traffic impacts

I am also greatly affected by the noise and movements of coal trains on the Sandy Hollow rail line and do not support the extension of coal extraction at Ulan Mine by an additional 2 years. S-52615206

Members of the Wollar community are constantly impacted by train movements at level crossings slowing down travel times. Additional coal extraction and train movements from the Ulan Mine until 2035 in addition to train movements from the Moolarben and Wilpinjong Mines has not been adequately addressed in the assessment report. Wollar Progress Association

The Proposed Modification would result in an extension to the life of mine of 2 years until 30 August 2035. All coal is transported from the UCC by rail, up to 10 laden trains per day. The Proposed Modification would provide for the continued rail transportation of coal from the UCC for the additional 2 years of operations, with no increase in approved train movements.

The Modification Report did not reassess the impacts of rail transportation associated with the additional 2 years of operations as an increase in approved train movements is not proposed and as such the impacts of rail transportation from the UCC have previously been assessed and are understood. There will be no change to the current impacts from rail transportation from the UCC operations as a result of the Proposed Modification.

5.1.7 Cumulative impacts

Cumulative impacts

The cumulative impact of the very large Ulan Mine operations that currently have approval to extract 22 mtpa until 2033 have not been adequately assessed in any of the modifications previously approved. S-52615206

I strongly oppose to this modification as it will increase the cumulative negative effects of three large coalmines in area. S-52149710

The UCC is approved to produce 20 Mtpa until 30 August 2033. The Proposed Modification would allow for a continuation of the approved production limit until 30 August 2035.

All of the environmental assessments undertaken for the Proposed Modification considered impacts in the context of the current and/or predicted impacts of the existing approved operations. In this regard, the assessments represent the cumulative scenario of the existing approved development operating in conjunction with the Proposed Modification.

The cumulative impacts of the operation of the neighbouring Moolarben and Wilpinjong Coal Mines have also been assessed for those environmental aspects where regional cumulative impacts are considered relevant. For example, the groundwater impact assessment modelled the impacts of both the existing and proposed UCC operations plus the neighbouring Moolarben operations. Modelling showed that the Proposed Modification has minimal additional impacts to those of the approved operation at the UCC and there is minimal interaction with neighbouring Moolarben Coal mine, hence there is no potential for significant cumulative groundwater impacts. Similarly, the assessment of Aboriginal cultural heritage assessed cumulative impacts which included consideration of the Proposed Modification in combination with other mining projects in the region such as Moolarben and Wilpinjong and concluded that these remain unchanged from assessment completed for the UCCO Project.

5.1.8 Economics

Validity of employment data

The fact that there are currently job vacancies at Ulan Mine, as well as at the adjacent Moolarben and Wilpinjong Mines raises doubt on the validity of the economic analysis of the benefits that can be attributed to mining in the region. S-52615206

As with any large business, there will always be a degree of staff turnover. The submission does not provide any evidence for why current job vacancies invalidate modelling of predicted economic benefits from the Proposed Modification.

Lack of consideration of climate change impacts in economic modelling

The Ernst and Young (EY) report suggests a glowing amount of financial benefits of this project. Attention is drawn to the failure of the EY report to identify any costs arising from the financial impacts of climate change in NSW, Australia and throughout the world. While this may be consistent with the "Planning Guidelines" it is certainty inconsistent with the need for critical analysis of this project both locally and internationally. The EY report infers that the bushfires in previous years and the flooding in 2022 are purely natural events totally unrelated to global warming. The inconsistency is not based on scientific evidence nor the predicted effects of global warming on climatic patterns. Insurance costs and uninsurable properties are a direct cost of global warming. These are real costs that the EY report should have identified. S-52614212

As identified in the submission, the Economic Impact Assessment has been prepared consistent with the methodology set out in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the EIA Guidelines).

Consistent with Australia's international obligations under the United Nations Framework Convention on Climate Change, the level of GHG emissions attributable to the Proposed Modification is measured by the:

- Scope 1 emissions: representing the direct GHG emissions from the Proposed Modification (e.g., from the use of diesel in plant and equipment)
- Scope 2 emissions: representing the indirect emissions from the purchases of inputs, (generally associated with the purchase of electricity).

The Technical Notes to the EIA Guidelines include specific commentary around the use of market prices as a proxy for the costs of climate change impacts associated with greenhouse gas emissions. The Technical Notes initiate the discussion on this issue as follows:

> *"While at present there is no identified carbon price in Australia, it is suggested for NSW project appraisal purposes that proponents refer to the NSW Government Guide to Cost-Benefit Analysis (TPP17-03) which states that: Market prices should be used as a basis for valuing the costs of carbon emissions, where reliable evidence can demonstrate that those market prices are not significantly biased as a direct consequence of scheme design."*

The Technical Notes indicate a preference for the European Union credit price as a proxy for carbon costs – however, recent significant price jumps in the EU credit prices indicate that the current EU market price falls afoul of the last point identified in the extract above, namely that its price may be biased as a direct consequence of the scheme design. Indeed, it is likely that most carbon trading processes will be significantly influenced by the particular characteristics of each respective scheme and the relevant emissions targets set by countries, which would limit their appropriateness as a proxy for externalities.

The use of the US EPA Social Cost of Carbon, however, provides a robust assessment of the costs of GHG emissions on a per-unit basis, allowing for agencies to understand the potential social benefits (costs) of reducing (increasing) emissions, whilst not being influenced by domestic policy settings.

The Social Cost of Greenhouse Gas (SC-GHG) figure is the monetary value of the net harm to society associated with adding a small amount of that GHG to the atmosphere each year. In principle, it includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHG, therefore, should reflect the societal benefit/cost of reducing (or increasing) emissions of the gas in question by one tonne.

To price the GHG emissions, EY has applied the interim social costs of carbon emissions derived from the 3% discount rate figures, published by the Interagency Working Group on Social Cost of Greenhouse Gases. This has resulted in a price per tonne of CO_2-e of $76.52 to $95.65 over the assessment period[1]. However, updated figures for the social cost of carbon have been proposed by the US EPA, which are currently in the process of being consulted on.

On a global basis, the total estimated GHG cost attributed to the Proposed Modification is $17.9 million in NPV terms (refer to **Table 5.1**). Attributing the GHG costs based on the NSW population, consistent with the Guidelines, results in an attributed GHG cost of $0.019 million to NSW in NPV terms.

Table 5.1 GHG Emissions Attributable to the Proposed Modification

	Total	2024	2027	2030	2032
ROM Coal Output (Mt)	27.5	0.06	0.12	4.22	0.78
Tonnes of GHG (Mt)^		0.00	0.00	0.05	0.01
Price Path ($ per tonne CO_2-e abated)^		16.94	77.99	82.40	88.29
Global Impact (NPV, $ million)^	17.9	0.00	0.00	0.05	0.01
NSW (NPV*, $ million)^	**0.019**	**0.00083**	**0.0091**	**0.0053**	**0.0011**

Source: EY estimates based on Umwelt (2022).

^ Real 2021 Australian dollars.

^^ Includes both Scope 1 and 2 emissions.

[1] Interagency Working Group, 2021, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide.

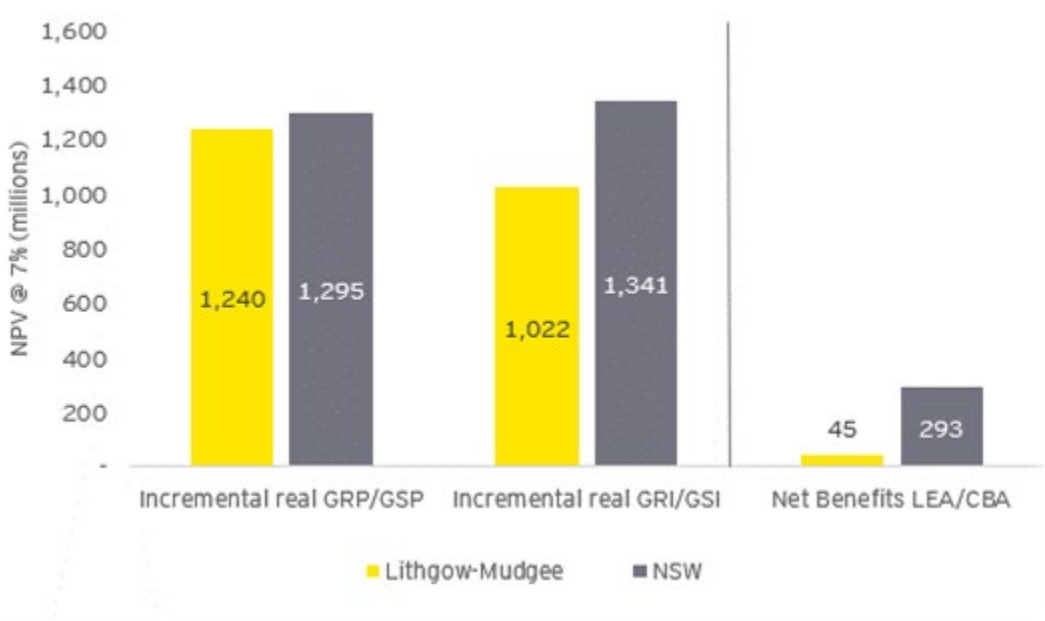
Economic impacts

EY claims further that it has modelled the effects of the proposed expansion using the EY General Equilibrium Model (EYGEM). EY claims this model is a large scale, dynamic, multi-region, multi-sector model of the global economy but fails to mention that this model excludes any impacts arising from global warming. Does the model include the short and long term effects of the floods in the Far North Coast of NSW in 2022? Or does the model just include natural events? The GEM is just that with no losses, no negatives and it is quite misleading to claim that it represents and authoritative model of the economy. S-52614212

The EY General Equilibrium Model (EYGEM) is a multi-commodity, multi-region, dynamic model of the world economy. Like all economic models, EYGEM is based on a range of assumptions, parameters and data that constitute an approximation to the working structure of an economy. It is not designed to be authoritative in nature. Its construction has drawn on the key features of other economic models such as the global economic framework underpinning models, such as the Global Trade Analysis Project (GTAP) and the Global Trade and Environment Model (GTEM), with state and regional modelling frameworks such as Monash Multi-Regional Forecasting Model (MMRF) and The Enormous Regional Model (TERM).

In this case, the model does not include physical risks, however, estimates of the externalities arising as a result of the Proposed Modification have been reported on, as per the Guidelines, within the Cost-Benefit analysis.

The purpose of including the Computable General Equilibrium (CGE) modelling results is to demonstrate the broader, economy-wide impact of the Proposed Modification, relative to a base case where the Proposed Modification does not proceed. The CGE modelling results serve as an additional, more complete, and companion assessment, and demonstrate that the results from the Cost-Benefit Analysis (CBA) are conservative in their estimate of the impact of the Proposed Modification. For example, **Graph 5.1** shows a comparison between the CGE modelled incremental gross regional product and gross regional income (for the Lithgow-Mudgee region), and the incremental gross state product and income as a result of the Proposed Modification. This is compared with the Net Benefits arising through the CBA (which is net the value of externalities, as required by the Guidelines).



Graph 5.1 Economy-wide Impacts of the Proposed Modification (2022 to 2033) from CGE modelling (LHS) and the CBA analysis (RHS) for the local region and NSW

Consideration of diesel fuel rebate savings not considered in economic assessment

The EY report does not include the diesel fuel rebate savings which mining is granted by the Commonwealth Government. This savings is not provided to all other industries and adds to the distortion of employment opportunities for other industries in the local area. Nor does the EY report identify the consistent pattern of Ulan paying zero Commonwealth income tax thus company income tax benefits to NSW are purely fictional. S-52614212

The calculation of company tax payable is an estimate of the net increase in tax payable based on increased profits obtained during the period of the Proposed Modification. While it is true that companies can operate under company structures that enable tax liabilities from one aspect to the business to offset tax liabilities elsewhere, the cost benefit analysis undertaken demonstrates the effect of the Proposed Modification on the net tax liability of these business structures. Accordingly, while the calculated tax liability may be partly offset by losses elsewhere, the net effect of the Proposed Modification would be to increase the business' total corporate tax liability relative to the Proposed Modification not occurring by $133.9 million in NPV terms for Australia, of which $42.8 million is attributed to NSW (based on the NSW share of the total Australian population).

It is noted that Glencore's corporate income tax payable in Australia for the 2022 fiscal year was $5.2 billion and the UCC is making a significant contribution to that total.

Accuracy of pricing predictions

The EY price predictions must be viewed critically. Prior to the Russian war, did previous EY coal price predictions include an allowance for this impact? Did previous price predictions include the impact of the gas cartel in setting prices? The changes that have taken place in Australia following the 2022 elections show that predictions of future prices are precarious. The risk for coal mining is that thermal coal mining becomes a stranded asset. Year after year, Federal income tax information shows that this coal mine activity has no profits subject to income tax. The long term financial viability of the company is thrown into doubt. When the proposed extension faces an income deficit, the EY predictions will be shown to be wishful thinking rather than critically reviewed. S-52614212

The decision to invest capital in developing a project is based on a commercial decision by a proponent that the returns will justify the upfront expenses having regard to investment risks (which will include coal price variability). The submission is correct in identifying that the modelled economic benefits reflect the Proposed Modification progressing in full. Should the Proposed Modification not proceed or be halted part-way through, the economic returns modelled would not be realised, however it must also be noted that many of the direct and indirect costs (including Scope 1 and 2 greenhouse gas emissions and biodiversity impacts) would also not accrue to the full extent modelled. Benefits flowing to NSW from upfront capital expenditure (e.g. supplier and employee benefits) would however accrue irrespective of whether the Proposed Modification proceeded in full.

Estimating any commodity prices will always be subject to some degree of uncertainty. It is for this reason that EY has adopted the use of consensus price forecasts for coal prices as these estimates are based on a range of different price projections from contributors who typically have extensive and recognised experience in price forecasting. Potential impacts associated with price variability are considered in the sensitivity analysis contained in the Economic Impact Assessment and the Proposed Modification is predicted to provide significant benefits to NSW under the most pessimistic of the price scenarios considered. It should also be noted that the most recent December 2022/January 2023 consensus forecast published by KPMG[2] as well as the October 2022 World Bank Commodity Markets Outlook[3] forecast significantly higher coal prices over the forecast period than have been assumed in the Economic Impact Assessment. These more recent forecasts would indicate coal prices which are well in excess of the optimistic price scenarios tested in the sensitivity analysis.

[2] https://assets.kpmg.com/content/dam/kpmg/au/pdf/2023/coal-price-fx-market-forecast-december-2022-january-2023.pdf
[3] https://openknowledge.worldbank.org/bitstream/handle/10986/38160/CMO-October-2022.pdf

The net benefit to NSW has been overstated

We find that a fair cost of the scope 1 & 2 emissions puts the carbon cost at $38 m, not $19,000.

The Proposal's Economic Assessment puts the Net Present Value cost of its 0.38 Mt CO_2-e of scope 1 & 2 emissions at $19,000. This is based on a carbon price of $76/T$co_2$e, rising to $95 over the life of the project, and a discount rate of 7%. That may be a suitable rate for speculative income, but various studies on greenhouse gas costs have arrived at an appropriate discount rate of 2%-3% and a Social Cost of Carbon of USD200-USD3000.

References: http://piketty.pse.ens.fr/files/DruppFreeman2015.pdf

https://iopscience.iop.org/article/10.1088/1748-9326/ab3cc9

https://www.lse.ac.uk/granthaminstitute/explainers/what-are-social-discount-rates/ Kikstra, Jarmo S.; Waidelich, Paul; Rising, James; Yumashev, Dmitry; Hope, Chris; Brierley, Chris M. (2021-09-06).

"The social cost of carbon dioxide under climate-economy feedbacks and temperature variability". Environmental Research Letters. 16 (9): 094037. Bibcode:2021ERL....16i4037K. doi:10.1088/1748-9326/ac1d0b. ISSN 1748-9326.

More egregiously, this world cost in the Economic Assessment has then been apportioned to NSW in proportion to its fraction of world population to arrive at a trifling $19,000 cost. A simple thought experiment demonstrates that this is completely unjustified. Why not substitute electorate for State? The economic income would remain the same, but the greenhouse gas costs would dwindle yet further.

The NSW Independent Planning Commission has recognised that the entire cost of carbon should be deducted from the calculated benefit to NSW.

Reference: NSW Department of Planning, Narrabri Underground Mine Stage 3 Extension Project (SSD 10269), Assessment Report, p xii

Assuming the rate of increase of carbon price roughly matches a suitable discount rate, and allowing a modest $100/t carbon price today, puts the carbon cost at $38 m. This eats significantly into the net benefit claimed to NSW of $292 m. Climate Change Balmain-Rozelle

The assessment methodology and source for the social price of carbon is detailed in Section 2.7 of the Economic Impact Assessment (Appendix 7 to the Modification Report). Consistent with the methodology set out in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the EIA Guidelines) released by the New South Wales (NSW) Government in December 2015 and *Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals*, the assessment of costs associated with greenhouse gas emissions is limited to Scope 1 and Scope 2 emissions only. Furthermore, as required by the EIA Guidelines, the cost benefit analysis undertaken is limited to the benefits and costs to NSW only.

Contrary to the assertion in the Climate Change Balmain-Rozelle submission, the NSW Independent Planning Commission, in its assessment of the Narrabri Underground Mine Stage 3 Extension Project, did not endorse the full apportionment of Scope 1 and 2 GHG Costs to NSW. The reference provided in support of this statement is to the Department's Assessment Report of this Project and not to the IPC Reasons for Determination; the Assessment report similarly does not endorse the full apportionment of Scope 1 and 2 GHG emission costs to NSW; rather, this approach to apportionment was provided as a sensitivity analysis to identify whether that Project would still present a net benefit to NSW if 100% of Scope 1 and 2 GHG costs were to be apportioned to Australia with relative apportionment to NSW for the purposes of the CBA based on population. As recognised in the IPC Reasons for Determination for both the Narrabri Underground Mine Stage 3 Extension Project and the more recent Glendell Continued Operations Project, there remains a difference of opinions over the interpretation of the EIA Guidelines. However, irrespective of the method applied, the Project would still represent a significant net benefit to NSW, even assuming the higher carbon price asserted in the Climate Change Balmain-Rozelle submission.

5.1.9 Social

Cumulative social impacts

Cumulative social impacts from mining include loss of community through ongoing property acquisition, large volumes of traffic on local roads, large number of train movements plus noise and dust from coal handling infrastructure. Central West Environment Council

UCMPL is a major landholder in the Ulan region. The proposed additional underground mining areas are predominantly owned by UCMPL with parcels of Crown land (licensed to UCMPL) and portions of privately-owned land. The proposed surface infrastructure is predominantly located on UCMPL owned land, with some infrastructure proposed for Crown land.

There are seven private landholders located within the proposed additional underground mining area that may be affected by the proposed mine plan changes. There are no additional private residences within the proposed additional underground mining area. UCMPL does not propose to acquire any land as part of the Proposed Modification.

The Proposed Modification does not result in any changes to coal processing, traffic volumes or train movements, other than the additional 2 years of operation. There are no additional cumulative impacts in relation to these aspects associated with the Proposed Modification.

Public health and safety impacts

People's mental health is being affected and their physical health is declining due to pollution, night work and this constant battle between doing the right thing and making a living. S-52448721

According to the *Social Impact Assessment Guideline* (SIA Guideline) (DPE, 2023), health and wellbeing impacts include impacts to both physical and mental health and may include psychological stress resulting from financial and/or other pressures, and changes to individual and public health. The Social Impact Assessment (SIA) undertaken for the Proposed Modification assessed health and wellbeing impacts by utilising data from a range of sources to develop a layered picture of the potential impacts arising from the Proposed Modification. Impacts were then evaluated using the risk-based approach defined in the SIA Guideline.

Considering the results of the stakeholder engagement processes and the environmental assessments, using the risk-based SIA social significance matrix the impacts to health and wellbeing as a result of the Proposed Modification were considered *unlikely* to occur with *minor* magnitude, resulting in a *low* social impact.

Mitigation measures proposed in the SIA in response to impacts to health and wellbeing included:

- continue to implement on site management measures to reduce dust including conveyor systems, enclosed conveyor transfer point, watering of exposed areas and stockpiles, and chemical suppressants on unpaved roads
- ongoing monitoring of air quality
- continuation of the 24/7 community complaints line
- publish environmental monitoring results on website
- ongoing engagement with key stakeholders and local community addresses community information requirements and preferences for engagement.

Intergenerational equity

In considering the planned extension please be mindful of the impact that expanding the mining of coal will have both for our generation and the generations to come. S-52158218

The objectives of the Proposed Modification are to:

- conduct mining in an environmentally responsible manner to minimise project-specific and cumulative environmental and social impacts, and make efficient use of the available coal resource
- maintain or reduce impacts of the UCC by incorporating mitigation measures into the Proposed Modification design
- maintain and extend the employment opportunities for UCC employees
- continue to develop the UCC with a long-term focus on:
    - maximising efficiency and coal resource recovery
    - optimising the use of existing infrastructure

- minimising additional disturbance footprint by maximising use of existing disturbed areas or avoiding sensitive areas, where practicable

- develop comprehensive mitigation, management and offset strategies that expand on existing commitments to mitigate predicted impacts associated with the Proposed Modification
- co-exist with the local community, including the villages of Ulan and other rural residential areas.

The design of the Proposed Modification and commitment to the management of environmental and social issues as outlined in the Modification Report will contribute to the maintenance of the health, diversity and productivity of the environment for future generations whilst providing for the recovery of a valuable, State-owned resource. The Proposed Modification will also make a significant contribution to maintaining services in the community through the direct and flow on effects of employee and operational expenditure and through development contributions in accordance with the EP&A Act.

The current NSW climate change policy framework specifically acknowledges the importance of ongoing coal production in NSW, not just from the NSW economy perspective, but also from the perspective of the preference for using higher quality coal relative to lower value coal in terms of realistically meeting a global net zero target by 2050.

5.1.10 Agriculture

Impacts on agricultural land

There of course will be other negative impacts of the proposed development including … reduced future opportunities for agriculture. S-52437711

An Agricultural Impact Statement (AIS) was prepared by Minesoils Pty Ltd as part of the Soil and Land Impact Assessment for the Proposed Modification (refer to Appendix 6 of the Modification Report). The AIS was prepared in accordance with the *Strategic Regional Land Use Policy, Guideline for Agricultural Impact Statements* (NSW Department of Trade, Investment, Regional Infrastructure and Services, 2012) and in consideration of the agricultural impact risk ranking methodology outlined in *Agricultural Impact Statement technical notes* (NSW Department of Primary Industries, 2013) to present a focussed assessment of potential impacts to agricultural resources and industries.

Based on the assessment of the potential risks to agriculture, the AIS concluded that the Proposed Modification would have a low risk of impact to agricultural resources. Furthermore, the Proposed Modification is not anticipated to have any impact to the existing agricultural enterprises conducted within the Project Area, including the additional underground mining area, or surrounding locality.

5.2 Justification and Evaluation

Need and justification for the Proposed Modification

It is inconceivable that a government with the interests of its citizens and the environment at heart would even consider allowing a coal project of this nature to proceed. S-52437711

Any extension to mining is wrong. We need to look at transitions away from coal and not extraction of more. S-52448721

There is no acceptable justification for increasing mining extraction from Ulan underground operations to access a further 25 Mt of sequestered greenhouse gases and extend the mine life and its environmental impacts by a further 2 years. Inland Rivers Network

Ulan Coal Mine is within the boundary of the CWOREZ. It is not appropriate for the NSW Government to approve increased coal extraction while attempting to meet net zero emissions targets. The proposed new transmission lines to service renewable energy generation projects cross Ulan Mine land. The NSW Government should be encouraging Glencore to invest in renewable energy projects on mine land rather the continuing to apply for additional coal extraction. S-52615206

The proposed new workings will provide continuation access to a large area of coal to the north of current operations. The modification aims to extend underground longwall panels to extract a further 25 million tonnes of thermal coal and extend the mine life by two years to 2035. Existing approvals should not be easily extended. Ulan Coal Mine produces thermal coal for export. So it is not needed for any use within Australia. Thermal coal is produced for use in electricity production. Thermal coal with a high carbon and sulphur content means it is also a major contributor to greenhouse gas emissions and global warming. There are other cheaper methods for power generation, mainly renewables. Despite Glencore's commitment to net zero emissions by 2050, this proposal will continue to increase global carbon emissions. This is greenwash. Water for Rivers

The environmental, social and economic impacts of the Proposed Modification have been identified and subject to a detailed environmental assessment based on:

- assessment of the site characteristics (existing environment)
- focused consultation with relevant government agencies
- engagement with local community and other stakeholders
- application of the principles of ecologically sustainable development, including the precautionary principle, inter-generational equity and conservation of biological diversity and ecological integrity
- expert technical assessment.

The Proposed Modification is located in an area that has a long history of coal mining, with the Project Area itself subject to mining activity since the 1920s. The UCC is a well-established mining operation situated within the Western Coalfields of NSW.

The Proposed Modification will involve the extension of existing longwalls into adjacent exploration leases, and construction of related infrastructure to support these additional underground mining activities. These longwall extensions adjoin and are continuous with the existing approved mining areas providing an efficient mine plan to recover the coal resources in this area. The Proposed Modification will ensure that recovery of the coal resource present at the UCC is maximised and will build upon existing approved activities and utilise existing infrastructure wherever possible. There would be minimal additional impacts on private and public assets or environmental features, consistent with those previously approved under PA 08_0184. The Proposed Modification will not limit the continued use of private landholdings for agricultural or residential purposes. Existing management and monitoring programs are in place to identify and manage the potential impacts on these land uses.

The Proposed Modification would allow for the efficient recovery of a valuable resource by maximising resource utilisation and use of existing infrastructure and workforce, thereby reducing capital costs and minimising environmental impacts compared with recovering this resource by another means.

The comprehensive environmental and social impact assessment as described in the Modification Report (Umwelt, 2022) has found that with the continued implementation of existing management and mitigation measures and the addition of the new measures identified, it is anticipated that the Proposed Modification can proceed within acceptable environmental standards, without significantly increasing the environmental and social impacts of the approved operations.

On the basis of the findings in the Modification Report, it is considered reasonable that with the implementation of the management, mitigation and offset measures proposed by UCMPL, the Proposed Modification will result in a net benefit to the NSW community.

As previously discussed in **Section 5.1.1**, the Proposed Modification does not create the demand for the coal which it would produce. If the coal is not mined at the UCC, the demand for this product would be met through coal mined elsewhere in the world, which would still be burnt and would still produce CO_2 emissions with the same corresponding climate change impacts to NSW, or arguably more emissions depending on the quality of the alternative coal source.

This is backed up by the NSW Government's *Strategic Statement on Coal Exploration and Mining in NSW* (the Strategic Statement) (State of NSW, 2020a) which states:

> *Ending or reducing NSW thermal coal exports while there is still strong long-term global demand would likely have little or no impact on global carbon emissions. Most coal consumers would be likely to source their coal from elsewhere, and much of this coal would be lower quality compared to NSW coal. Reducing demand for thermal coal in line with the Paris Agreement by progressively replacing coal-fired electricity with cleaner energy sources, as has been seen in Europe, will be more effective in reducing global emissions than reducing NSW coal supplies (p. 6).*

The current NSW climate change policy framework specifically acknowledges the importance of ongoing coal production in NSW, not just from the NSW economy perspective, but also from the perspective of the preference for using higher quality coal relative to lower value coal in terms of realistically meeting a global net zero target by 2050. Accordingly, the assertion that any new coal mining or extensions to existing operations should be refused on climate change grounds alone is inconsistent with both a responsible approach to global net zero targets and NSW Government policy.

The importance of coal to the NSW economy is specifically acknowledged in the *Net Zero Plan Stage 1: 2020-2030* (State of NSW 2020b) where it states:

> *New South Wales' $36 billion mining sector is one of our biggest economic contributors, supplying both domestic and export markets with high quality, competitive resources. Mining will continue to be an important part of the economy into the future and it is important that the State's action on climate change does not undermine those businesses and the jobs and communities they support (p. 22).*

It is therefore clear that the current NSW climate change policy framework specifically acknowledges the importance of ongoing coal production in NSW, not just from the NSW economy perspective, but also from the perspective of the preference for using higher quality coal relative to lower value coal in terms of realistically meeting a global net zero target by 2050.

5.3 Issues Beyond the Scope of the Proposed Modification

Company Reputation

Glencore should not be allowed to expand their operations.

Glencore has proven that they are not prepared to modify their arrogant behaviour towards their neighbours, the wider community, the environment, threatened and endangered species, Aboriginal Heritage and other water users. S-5226706

The UCC is operated by UCMPL, a subsidiary of Glencore. UCMPL has a strong record of responsible environmental and social performance.

UCMPL has an established relationship with the surrounding community and other stakeholders and has implemented a process for ongoing engagement regarding its mining operations. UCMPL is committed to working with the community to ensure they can continue to coexist.

UCMPL undertakes operations at the UCC in accordance with relevant approvals and licences.

Current operations

UCMPL currently has consent to extract in excess of 22 million tones of thermal coal per annually until 2033. With three large longwall underground operations mines and previously an open cut mine, it covers an area of almost 150 km^2, much of which is environmentally sensitive pristine wooded forest with many indigenous cultural heritage areas. As landholders we have no idea of the total volume of coal been extracted by the three companies, the cumulative impacts on surface and Ground water or impacts of subsidence on the region. I believe it is incumbent on the department to make those facts known to the property owners. S-52159208

The UCC is approved to extract 20 Mtpa (including maximum of 4.1 Mtpa ROM from Open Cut) until 30 August 2033.

All mining operations, including UCC and surrounding operations, are required to report production data annually in their Annual Review. Annual Reviews are published on the UCMPL website. The Annual Review also reports on all environmental compliance aspects, including groundwater, surface water and subsidence impacts.

UCC's Annual Reviews can be accessed here: https://www.glencore.com.au/operations-and-projects/coal/current-operations/ulan-coal/reporting-documents

Current water management and monitoring

The Ulan Coal Mine is still polluting the Goulburn River with salty discharges into the river. No monitoring of the salt levels of these discharges has taken place. S-52614707, Water for Rivers

The UCC exists within a well-regulated water resource management system that has been designed to provide for the sustainable management of the State's water resources. This includes licensing of allowable water take with consideration of environmental flow requirements of watercourses and the needs of other water users; control of water pollution, including management of sustainable salt loads associated with all water sources, including mine water discharges; and guidelines that govern the appropriate design of water management systems for mines to provide for appropriate water quality in accordance with EPL requirements.

As part of the Water Management System at the UCC, mine water, surface runoff from operational areas, and surplus water from various site process (e.g. from the Coal Handling and Preparation Plant (CHPP)) are processed through Water Treatment Facilities, comprising various filtration technologies (microfiltration, ultra-filtration and reverse osmosis), to produce a supply of clean, relatively low salinity water.

This clean water is then blended with raw water sources (as required) to produce blended water products of different qualities suitable for various applications including:

- discharge to Ulan Creek/Goulburn River
- process water supply to site and to the CHPP
- dust suppression on haul roads and other operational areas
- water sharing with Moolarben Coal Operations.

Water quality is controlled to meet the quality requirements of EPL 394 for each particular application. Raw water is also used directly as irrigation water as part of the Bobadeen Irrigation Scheme.

Water quality monitoring of any discharges is undertaken in accordance with the requirements of EPL 394, Surface Water Monitoring Program and Groundwater Monitoring Program. Monitoring of discharges occurs daily during any discharge event and includes:

- electrical conductivity (an indicator of salinity)
- pH
- total suspended solids
- plus oil and grease, iron and zinc where required by licence conditions.

Monitoring data is reported on a regular basis and can be accessed on the UCC website.

Noise impacts from existing operations

There is anecdotal, although reliable, evidence from neighbours that noise from mining operations regularly exceeds acceptable levels and monitoring takes place half heartedly with every excuse given for the reasons for the excessive noise other than it being the fault of the company. This is not responsible management. S-52256706

In accordance with the Noise Management Plan, UCMPL currently undertakes attended noise monitoring twice per year, primarily used for determining compliance against statutory noise criteria, and unattended or real-time monitoring, which is used for proactive noise management.

Attended noise monitoring results are published to the UCC website and are reported in Annual Reviews. Monitoring over the past 5 years indicates measured noise levels align with noise predicted levels, with no exceedances of PA 08_0184 or EPL 394 noise limits. Results of proactive noise management are reported in the Quarterly Environmental Monitoring reports and published to the UCC website.

All community complaints received by UCMPL are managed in accordance with the EMS and the UCC Complaints Procedure. Stakeholder complaints are published to the UCC website.

Coal mining operations in NSW

Currently, the Ulan mine is projected to remain in operation until 2033. The State government needs to be focusing on developing plans to substantially reduce the life of this and all other coal mines in NSW. That is the urgent task at hand, not contemplating approving more coal extraction. Mudgee District Environment Group

The UCC is currently approved to operate until 30 August 2033. The Proposed Modification would provide for extension to the life of mine until 30 August 2035.

The Proposed Modification maximises the efficient recovery of an additional approximate 25 Mt of product coal resource and has been designed such that this can be undertaken without significantly increasing the environmental and social impacts of the existing approved UCC operations.

The Economic Impact Assessment (refer to Appendix 17 of the Modification Report) describes a range of positive benefits from the Proposed Modification that will result at a local, regional and State level. These benefits include:

- continued employment of approximately 930 full time equivalent employees for an additional two years
- the Proposed Modification is estimated to provide a net benefit of $292.6 million to NSW, in NPV terms
- the Proposed Modification is estimated to provide a net benefit of $45.2 million to the Lithgow-Mudgee region, in NPV terms.

Previous greenhouse emissions

Another 2 years of mining will add 377,000 t CO_2-e in Scope 1 and 2 emissions from the Ulan Coalmine. This mine appears to have the 2nd highest Scope 2 emissions of any coal mine in NSW (2nd only to South32's Bulli Seams / Appin mine).

Scope 2 emissions increased – year on year – for the last three years in a row. There is no evidence that renewable energy is being considered or purchased to lower Scope 2 emissions. Central West Environment Council

The quantum of greenhouse gas emissions from a mining operation are influenced by a number of factors, including production levels and mining methods. The UCC is one of the largest underground mining operations in NSW and a result would be expected to have a larger Scope 2 greenhouse gas emission profile than some other mining operations.

As part of its Annual Review, UCMPL reports on GHG emissions from the UCC against predicted emissions. During the 2021/22 financial year, UCML's Scope 1 and Scope 2 emissions were below the predicted emissions assessed at the time of approval, with Scope 1 emissions less than 100 kt of CO_2-e and not triggering the Safeguard facility registration.

Glencore considers a range of emissions reduction initiatives including renewable energy options as part of business planning. UCMPL implements reasonable and feasible management controls to mitigate Scope 1 and 2 greenhouse gas emissions associated with current operations. These are documented in the Air Quality and Greenhouse Gas Management Plan for the UCC (Glencore, 2021).

UCMPL has incorporated a range of measures into the Proposed Modification with the aim of minimising potential greenhouse gas emissions and improving energy efficiency. Energy efficiency was a key driver for the design of the extended mine plan, as energy usage is a direct driver of cost as well as greenhouse gas emissions. The Proposed Modification design inherently minimises greenhouse gas emissions generated from the mining operations (Scope 1 emissions) through measures including:

- limiting the number of drive headings, minimising the size of the ventilation system and shortening travel distances
- utilising existing mining equipment that has high energy efficiency and optimised motor sizes
- scheduling activities so that equipment operation is optimised and automatically shutting down equipment when not in use
- reducing reject percentage through monitoring of CHPP density set points to extract highest yields.

As a result of ongoing energy efficiency measures across approved operations, energy and greenhouse gas intensities remain lower than predicted in the 2009 Environmental Assessment (Umwelt, 2009) resulting in lower than predicted Scope 1 and Scope 2 emissions for approved operations at the UCC (Glencore, 2021).

Impacts of operations on large-eared pied-bat

Annual monitoring reports for the vulnerable large-eared pied-bat (Chalinolobus dwyeri) have demonstrated a decline in the population over time on the mine site. Central West Environment Council

A report has been prepared by Eco Logical (2023) to provide a summary of the outcomes of microbat monitoring since the one instance of declining bat detection in 2019. The Eco Logical report indicates high activity levels recorded from target threatened microbats in the subsequent years since 2019. A summary of that report is provided in Section 5.2.1.6 of the BDAR and the report is included as Appendix F of the amended BDAR.

5.4 Procedural Matters

Application of State Significant Development

State of Significance Status is both grossly overused, and used as a Government tool to enable large scale destruction of NSW country and natural areas. S-52369207

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the primary legislation governing environmental planning and assessment for NSW.

Section 4.36 of the EP&A Act outlines the requirements for a development to be considered as a State significant development (SSD), being:

> ***4.36 Development that is State significant development***
>
> *(1) For the purposes of this Act,* ***State significant development*** *is development that is declared under this section to be State significant development.*
>
> *(2) A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

(3) The Minister may, by a Ministerial planning order, declare specified development on specified land to be State significant development, but only if the Minister has obtained and made publicly available advice from the Independent Planning Commission about the State or regional planning significance of the development.

Clause 5(1)(a) of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) declares development for the purposes of coal mining to be SSD.

There is no discretion in whether a project is considered SSD and a proponent cannot elect for their development to be considered as SSD without triggering the requirements of Section 4.36 of the EP&A Act. UCMPL have operated in accordance with the requirements of the EP&A Act.

Compliance with government energy policy

It is inconceivable that a government with the interests of its citizens and the environment at heart would even consider allowing a coal project of this nature to proceed. Ironically this proposed Ulan mine is located within the NSW Government's renewable energy zone for the Central West. S-52437711

NSW is currently in a transition to build a reliable, affordable and sustainable electricity future to support a growing economy (NSW Government, 2022). The State's five existing coal fired power stations will progressively close which commenced in 2022. These power stations currently provide around three quarters of NSW's electricity supply and two thirds of the firm capacity required during summer heat waves. In NSW, all five of the coal-fired power stations are scheduled to retire between 2022 and 2043 (AEMO, 2019) beginning with Liddell Power Station which closed in 2023, increasing the current demand for renewable energy. The NSW Government is taking action to lead investment in new renewable generation to ensure an orderly transition away from coal (Energy Corporation, 2022).

The NSW Government has indicated that REZs will play a vital role in delivering affordable energy generation to help prepare the State for the expected retirement of thermal power stations over the coming decades.

The Central West Orana (CWO) REZ was formally declared on 5 November 2021 under the *Electricity Infrastructure Investment Act 2020*, with NSW Energy Co appointed the Infrastructure Planner responsible for the coordination of the development of generation and network infrastructure. The operation of the existing UCC, and the Proposed Modification, is not inconsistent with the operation of the CWO REZ.

As outlined in **Section 5.1.1**, while the global pandemic during 2020 subdued global energy demand, world energy demand since then has rebounded strongly, beyond 2019 levels, with a continued demand for fossil fuels particularly in developing countries (International Energy Agency, 2021). Meeting this increased energy demand into the future will require a mix of energy sources, with thermal coal expected to remain a key component of this energy mix within the timeframe of this mine approval (International Energy Agency, 2021).

Lack of Specificity Relating to Biodiversity Impact

Notwithstanding that the Project implies merely extending underground operations, the Modification Report outlines the intention to clear 27.4 hectares of native vegetation to include changes to the surface infrastructure associated with new underground operations, including ventilation, power and dewatering infrastructure as well as access roads. Of that area, 9.5 hectares (around a third) has been "assessed" by the proponent as vegetation consistent with the Box Gum Woodland Critically Endangered Ecological Community. But this information is neither precise nor reliable for present purposes because the proponent does not identify the locations of the affected land to be cleared. It claims that it would prefer instead to make that decision after the modification is granted, evidently to avoid the costs of undertaking detailed planning of infrastructure sooner. The vagueness and uncertainty associated with this approach is demonstrated by this statement of the proponent at page 22 which leaves open the possibility that later on, the affected area could be doubled:

"The total potential 'maximum parameters' footprint of direct impacts on vegetation and habitats that may occur is 54.7 ha, which has captured the largest potential impact across each of the various plant community types (PCTs) in the additional underground mining area. This assessment is therefore conservative and, whilst this impact area has been assessed, the development is not intended to result in the removal of 54.7 ha of native vegetation."

The proponent undertook ecological studies by a process it calls a "maximum parameters assessment methodology" and used it to evaluate nine "potential" alternative locations that it might select for clearing. That methodology led it to conclude that whatever sites are chosen, at least one third will be critically endangered Box Gum Woodland. Furthermore, it will not be land cleared at one contiguous location, but at scattered locations comprising ventilation shafts and bore holes connected by roads. These are formulaic derivations, estimates and averages rather than precise descriptions of the land to be cleared. We say the proponent should be required to detail with precision the location of every piece and corridor of native bushland it proposes to clear so that the impact of new infrastructure on biodiversity can be satisfactorily assessed. Accordingly, we recommend that the proponent be required to amend its Modification Report accordingly as an essential requirement or to withdraw the proposal.
Birdlife Southern NSW

A detailed assessment of biodiversity impacts was prepared in the BDAR. As outlined in the BDAR and **Section 3.2**, UCMPL has developed conceptual infrastructure layouts which have been assessed as part of this Modification Report, however, it is acknowledged that the detailed design including final location of infrastructure is subject to further exploration and detailed mine planning. To retain flexibility in the location of surface infrastructure proposed, a maximum parameters assessment was also completed to accommodate the worst-case potential impacts as part of the biodiversity assessment.

UCMPL has sought to refine the maximum impact areas associated with the Proposed Modification. The proposed surface infrastructure changes have reduced the potential direct impact associated with the Proposed Modification to 23 ha, a reduction of 4.4 ha from that proposed in the Modification Report.

As outlined in **Section 4.3**, a preferred Development Footprint is presented as the preferred case, and then the contingency options have been assessed to allow for flexibility in placement of surface infrastructure. The intent of this approach is to provide certainty on potential impacts associated with the Proposed Modification for the community and regulators.

Under the worst-case assessment, the Proposed Modification has been assessed as potentially having a direct impact of up to 26.1 ha of native vegetation communities, a reduction of 11 ha from that proposed in the Modification Report. This assessment is conservative and the Proposed Modification will not ultimately result in the removal of 26.1 ha of native vegetation.

Adequacy of water resource assessments

It is disturbing that comprehensive studies have not been performed on the cumulative impacts of all the current approvals on our surface and ground water, {our water resources are the life line of the entire area}. S-52159208

Any reasonable person would anticipate that the consent authority would halt all operations and have the subsidence and water modelling peer reviewed by a SUITABLY qualified experts in addition to an internal review / investigation. S-52159208

The indirect/passive take of up to 8.3 GL of base flow to the Talbragar River from this porous rock aquifer is a critical issue that is not adequately addressed. Inland Rivers Network

Comprehensive assessments of both groundwater and surface water have been completed for the Proposed Modification, and the approved UCC operations, by suitably and experienced qualified consultants. DPE – Water provided a submission on the Proposed Modification and did not raise any significant issues with the Proposed Modification or the adequacy of the assessments (refer to **Section 4.2**).

The groundwater model prepared by AGE for the Proposed Modification, including the calibration and sensitivity analysis, was peer-reviewed by 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*' (refer to Appendix 8 of the Modification Report).

The GIA assesses impacts to base flow associated with the Proposed Modification in relation to the approved operations. As outlined in the GIA (Appendix 8 of the Modification Report), modelling of the Proposed Modification predicts the peak impact on the baseflow for the Talbragar River system (and its tributaries) is a 7.6% increase (approximately 2.2 ML/year) in intercepted baseflow over the approved level. The total baseflow for the Talbragar River and its tributaries is predicted to be over 3,726 ML/year (10.2 ML/day), making the predicted impact from Proposed Modification comparatively small to imperceptible (0.06% of total baseflow). The Goulburn River system is not expected to be impacted by the Proposed Modification given its location and no additional impacts on baseflows in this system are predicted.

Adequacy of groundwater model

The constant need to update and upgrade the groundwater model when the actual impacts have been experienced leaves no confidence in the approvals process. S-52615206

The assessment of cumulative impacts of Ulan Coal mine on regional water sources is deficient and cannot be used to make an informed decision on the proposed extension of mine impacts. Central West Environment Council

As outlined above, the groundwater model prepared by AGE for the Proposed Modification was peer-reviewed by 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' (refer to Appendix 8 of the Modification Report).

As detailed in Section 7 and Table 7.1 of the GIA (refer to Appendix 8 of the Modification Report), the model setup for the groundwater assessment included the Moolarben mine, allowing the model to inherently assess the cumulative impacts of both the existing mining operations (UCC and Moolarben) and the Proposed Modification. The model setup included:

- No mine model – simulates no mining in the model domain.
- Only Moolarben – simulates the presence of Moolarben mine but excludes all mining at the UCC. This can be used to isolate the UCC only impacts from a cumulative model run.
- Approved mine – simulates the mine plan approved under Modification 4. This model also simulates the Moolarben mine.
- Modification model – simulates the approved and additional proposed mining at the UCC and the mining at Moolarben.

As required by PA 08_0184, the groundwater model is calibrated/validated on a two-yearly basis by a qualified groundwater consultant. Monitoring data from the network of standpipe piezometers and porewater pressure transducers provide the groundwater level information necessary for calibration/validation of the model. The estimated groundwater seepage to the underground operations, calculated through preparation of the site water balance, is used in the model calibration/validation process. Rainfall data, synthetic data derived from interpolation between surrounding point records held by the Bureau of Meteorology, is also used in the model calibration/validation process.

If there are significant changes to the mining operations, then the groundwater model is recalibrated. In the event that monitoring data identifies a divergence in an adverse way from the predicted trends (i.e. from numerical groundwater modelling predictions), then such departures will initiate further actions, as outlined in the Trigger Action Response Plan of the Surface Water and Groundwater Response Plan.

Additionally, the assessment for the Proposed Modification used an updated groundwater model with a different underlying software to that used previously for Modification 4 (MOD4). The software (MODFLOW-USG) has some additional features over the previously used software (MODFLOW SURFACT), most notably being the structure and the ability to truncate model layers. This allows outcropping geological formations and their associated outcropping recharge zone to be represented. Through the change to MODFLOW-USG, the model structure was updated to better reflect the hydrostratigraphic units in the area. The updated structure has meant that the model layers assigned to the observation bores and private bores were modified, resulting in changes to the magnitude of impacts predicted by the cumulative impact of mining.

Groundwater impacts at the UCC have been generally consistent with predicted impacts to date (refer to the GIA).

Groundwater reporting

Glencore has to submit an Annual Review for groundwater data. An annual report can be a very long interval in some circumstances. We ask that should approval be granted, it be conditional on: specific trigger points deemed significant to require immediate or more regular reporting. Bathurst Community Climate Action Network

Groundwater monitoring is undertaken in accordance with the Groundwater Monitoring Program (GWMP). The GWMP outlines the baseline, ongoing and future monitoring requirements, impact assessment criteria (trigger levels) and investigation and reporting protocols for potential groundwater impacts.

In addition, UCMPL has a Surface Water and Groundwater Response Plan (SWGWRP). The objective of the SWGWRP is to provide appropriate trigger, action, response plans (TARPs) and response protocols in the event that mining operations result in adverse impacts to the surrounding surface water and/or groundwater environment(s). It also provides information on the trigger mechanisms, summarises the potential water management issues that may arise and provides information on the appropriate TARP or response procedures to be used.

The SWGWRP provides TARPs or response protocols for the following events:

- impact assessment criteria (trigger level) exceedance
- EPL 394 criteria exceedance (non-compliance)
- surface water and groundwater impacts on adjacent private landowners
- variations from the predictions made in the groundwater model
- potential impacts on groundwater dependant ecosystems
- unauthorised off-site discharges
- environmental Incident: Unforeseen Hazard, Unplanned Event or Unauthorised Discharge
- community complaints (relating to surface water and groundwater).

In the event of an incident, UCMPL are required to report immediately, following any occasion of incident.

Adequacy of biodiversity assessment

The cumulative impact on biodiversity from coal mining operations in the region has not been adequately assessed and cannot be offset. Increasing pressure on threatened species habitat within Goulburn River National Park and Munghorn Gap Nature Reserve has not been investigated. Central West Environment Council

The BDAR has been prepared using the NSW Biodiversity Assessment Method (BAM) (DPIE, 2020) in accordance with the *Biodiversity Conservation Act 2016* (BC Act). The BDAR was prepared in accordance with the BAM to:

- describe the existing biodiversity environment
- identify flora and fauna species and ecological communities that have the potential to be impacted by the Proposed Modification
- determine the presence or likelihood of occurrence of threatened flora and fauna species and populations and threatened ecological communities (TECs) listed under the BC Act and the EPBC Act
- calculate the offset requirements for biodiversity impacts associated with the Proposed Modification
- describe the proposed offset strategy for the Proposed Modification.

The BDAR explicitly considers cumulative habit loss and vegetation clearance impacts. As outlined in the BDAR (Appendix 11 of the Modification Report), the Development Footprint is situated in a landscape that is characterised by agricultural land and mining land. The history of land clearing, agriculture and mining development has resulted in a low to moderate incremental loss of native woodland vegetation and fauna habitat surrounding the Development Footprint. The Proposed Modification will result in the direct loss of a maximum of approximately 23 ha as a result of proposed surface infrastructure.

It is recognised that the Proposed Modification will result in removal of vegetation, and thus contributing to habitat loss and vegetation clearance in the locality. To address these impacts, mitigation measures are proposed including:

- Maximising the use of existing disturbed areas within the Project Area for the placement of infrastructure and to avoid impact on surrounding vegetation.
- Implementation of a detailed pre-clearing and tree felling supervision program for proposed surface infrastructure areas to limit disturbance as far as practicable. This will follow the existing procedures currently implemented by UCMPL under the current BMP.
- Current weed management and feral fauna management activities (being completed as part of the BMP) will cover the areas subject to the Proposed Modification.

The Proposed Modification does not have any direct or indirect impact on the Goulburn River National Park or Munghorn Gap Nature Reserve.

Adequacy of assessments for previous modifications

It is my contention and strong submission that it is totally remiss and negligent of the Department to continue to consider applications by UCMPL until the mandatory environmental studies associated with MOD 3 are performed. Those studies were not performed due to the submission of FALSE & MISLEADING Information in the EA's prepared by UMWELT on behalf of UCMPL, the Department is very conversant with the entire matter and has to date failed to ensure those studies are performed. S-52159208

The cumulative impact of the very large Ulan Mine operations that currently have approval to extract 22 mtpa until 2033 have not been adequately assessed in any of the modifications previously approved. S-52615206

The approved UCC operations are subject of a valid project approval (PA 08_0184), as modified.

Modification 3 related to the Ulan West mine plan, including re-orientating the main headings and the extension of seven longwalls. The southern extent of Ulan West LWs 11-12 are partially located over an area of private land. At the time of preparation of the environmental assessment for Modification 3, access to the private property was not available, as shown in relevant assessment documentation. It is noted that the private property will be subject to subsidence impacts however no surface infrastructure was (or is) proposed on the private property in question. Modification 3 was assessed by DPE and subsequently approved on 14 March 2016. UCMPL has offered to undertake ecological, subsidence and archaeological surveys of the private property pending landholder agreement.

All previous environmental assessment undertaken for the approved UCC operations has appropriately assessed relevant cumulative matters in accordance with relevant legislation and guidelines current at the time of preparation.

Past Failures to apply Environmental Offsets

a) In was reported in the Guardian in 2021, that Ulan Coal mine was granted eight extensions over eight years to the deadline by which it had to secure offsets to compensate for the destruction of box gum woodland and habitat for the swift parrot, regent honeyeater and large-eared pied bat. But 10 hectares remained outstanding a decade after the mine was approved. It has only recently been carried out.

b) The pattern of delays had set a precedent for mining companies securing offsets only when it's convenient for them, apparently without consequences.

c) Offsets facilitate environmental destruction while kicking the claimed compensatory measures down the road. The federal environment department has never fined a coal company for failing to secure an offset on time.

d) However, in light of this history, it is clear no one can trust Glencore to fulfil its environmental obligations. Water for Rivers

Glencore and UCMPL have a strong record in preparing and implementing biodiversity offset strategies that address significant biodiversity matters and adequately counterbalance impacts on them. To date, Glencore has prepared and submitted ten Biodiversity Stewardship Site applications to the BCT, seeking to conserve and manage upwards of 3,000 ha of land.

UCMPL is required, under PA 08_0184 and EPBC Approval 2009/5252, to provide biodiversity offsets to compensate for impacts from the approved operations (and its associated approved modifications). All approved offset areas were secured by Glencore in 2019, with the exception of the proposed 10-hectare privately-owned portion of Brokenback Conservation Area (BCA – Area 2). In late 2021, UCMPL lodged a modification application of PA 08_0184 (Modification 7) to permit use of an alternative offset site, known as the Bobadeen West Vegetation Offset. Detailed assessment undertaken by Eco Logical Australia Pty Ltd concluded that the alternative offset site with an area of 22.48 ha contains vegetation communities, cliffline habitat and heritage features that would meet or exceed the objectives and compliance requirements for BCA – Area 2. Of note, the Bobadeen West Vegetation Offset area will provide protection of a confirmed maternity roost for threatened microbat species, including the large-eared pied bat, as required by EPBC Approval 2009/5252. The Biodiversity Stewardship Agreement for the Bobadeen West Vegetation Offset was executed at the end of June 2023.

Application of water licensing

Base flows to the Talbragar River are protected as planned environmental water under the NSW Water Management Act 2000. The cumulative loss of baseflows from mining activity is permanent over a very long timeframe and will not be returned through the holding of groundwater licences. These losses are a net reduction in planned environmental water and therefore, do not meet the requirements of the Basin Plan. Inland Rivers Network

The aim of the Murray–Darling Basin Plan is to bring the Basin back to a healthier and sustainable level, while continuing to support farming and other industries for the benefit of the Australian community. While there are limits to the amount of water that can be taken from the Basin each year, these are managed through local water plans and water resource plans (Murray-Darling Basin Authority, 2023).

The UCC exists within a well-regulated water resource management system that has been designed to provide for the sustainable management of the State's water resources. This includes licensing of allowable water take with consideration of environmental flow requirements of watercourses and the needs of other water users; control of water pollution, including management of sustainable salt loads associated with all water sources, including mine water discharges; and guidelines that govern the appropriate design of water management systems for mines to provide for appropriate water quality in accordance with EPL requirements.

The UCC, and Proposed Modification, will continue to operate in accordance with relevant water plans and water resource plans, and therefore is not inconsistent with the Murray-Darling Basin Plan.

5.5 The Proposed Modification

Extent of mine extension

This is a major extension of the existing mine; it extends up to 10 km in both north-south and east-west directions. We are very disappointed that a further 990 ha would be impacted by mine subsidence. Bathurst Community Climate Action Network

The Proposed Modification comprises:

- extension of Ulan Underground panels LWW9 to LWW11 to the west, up to approximately 4 km
- widening of Ulan Underground LWW11 by approximately 30 metres
- extension of Ulan West LW9 to LW11 to the north, up to approximately 2 km.

The Proposed Modification will result in a minor increase of the total area of subsidence affectation associated with the UCC when compared to the approved operations. The range of predicted subsidence impacts within this additional area of subsidence affectation are consistent with those approved under PA 08_0184, and whilst a range of impacts are predicted, no significant adverse impacts are predicted on the land surface or natural features located within the modified Ulan West and Ulan Underground mining areas.

Alternate use of land

It would be more logical for Glencore to honour their commitment to reduce emissions by utilising the land for solar panels. The mine location is within the Central West Orana Renewable Energy Zone – hardly an appropriate location for an expanding coal mine. Mudgee District Environment Group

As outlined in **Section 5.1.1**, Glencore is committed to transitioning to a low-carbon economy and has announced publicly that to assist in meeting the growing needs of a lower carbon economy, globally the company aims to prioritise its capital investment to grow production of commodities essential to the energy and mobility transition and to limit its global coal production capacity broadly to current levels.

The Proposed Modification is located in an area that has a long history of coal mining, with the Project Area itself subject to mining activity since the 1920s. The UCC is a well-established mining operation situated within the Western Coalfields of NSW. The Proposed Modification will involve the extension of existing longwalls into adjacent exploration leases, and construction of related infrastructure to support these additional underground mining activities. These longwall extensions adjoin and are continuous with the existing approved mining areas providing an efficient mine plan to recover the coal resources in this area. The Proposed Modification will ensure that recovery of the coal resource present at the UCC is maximised and will build upon existing approved activities and utilise existing infrastructure wherever possible.

Renewable Energy Zones (REZs) will group new wind and solar power generation into locations where it can be efficiently stored and transmitted across NSW. The continued operations at the UCC will not impact on the ability of the Central-West Orana REZ to be established and meet its purpose. Areas subject to proposed additional underground mining associated with the Proposed Modification are vegetated or used for agricultural purposes. Vegetated areas are not suited to solar energy projects.

Extension of mine life

It is imperative that coal mining cease at the Ulan operation no later than 2033 to allow for the necessary global decarbonisation for the management of climate extremes. It would be preferable that the Ulan Coal Mining company cease its operations immediately, if they cannot mitigate their environmental impact. The Rylstone community has suffered enough. Water for Rivers

The current UCC operations are approved until 2033. The Proposed Modification, if approved, would extend the life of the UCC operations by approximately 2 years. As outlined in **Section 5.1.1**, the Proposed Modification is unlikely to materially increase the national or State effort required to reach Australia's and NSW's 2030 greenhouse gas mitigation targets. Further it is unlikely to limit Australia or NSW achieving their mitigation targets. As part of implementing the Proposed Modification, UCC will seek to mitigate greenhouse gas emissions through ongoing energy efficiency initiatives and optimising productivity.

The comprehensive environmental and social impact assessment as described in this Modification Report has found that with the continued implementation of existing management and mitigation measures and the addition of the new measures identified, it is anticipated that the Proposed Modification can proceed within acceptable environmental standards, without significantly increasing the environmental and social impacts of the approved operations.

Longwall mine extraction over a privately owned property

The original Mod 6 application proposed an extension of the MOD 3 approval over my property [REDACTED]. In the absence of the mandatory environmental assessments prior to the MOD 3 application I strenuously objected till those studies were performed and completed. UCMPL elected to amend the MOD 6 application by deleting the proposed extensions over my property. S-52159208

The Proposed Modification initially envisaged a widening of Ulan West LW12 which has not been pursued in the modification application. The Proposed Modification does not propose any changes to approved operations within the lot of land in question.

6.0 Updated Project Justification

This detailed Submissions Report has been prepared to provide an analysis of the issues raised in agency and community submissions and to add further clarification on details of the Proposed Modification where necessary. Following consideration of the submissions received on the Proposed Modification, additional consultation with government agencies has been undertaken with a subsequent review of minor elements of the proposed infrastructure layout to further reduce impacts on biodiversity (as described in **Section 3.0**).

As discussed in the Modification Report, the Proposed Modification maximises the efficient recovery of a valuable resource by maximising resource utilisation and use of existing infrastructure and workforce, thereby reducing capital costs and minimising environmental impacts compared with recovering this resource by another means.

As identified by the NSW Government's 2020 *Strategic Statement on Coal Exploration and Mining in NSW* (NSW Strategic Statement) coal mining is an important industry for NSW and will continue as such for the next few decades. Coal mining is a significant source of direct and indirect jobs in regional NSW and underpins many local economies. The NSW Strategic Statement acknowledges the need to recognise existing industry investment by continuing to consider responsible applications to extend the life of current coal mines. As an established operation with access to significant coal reserves beyond the term of PA 08_0184, the Proposed Modification fits within the Plan of Action proposed in the NSW Strategic Statement for supporting responsible coal production.

The NSW Strategic Statement also recognises that the use of thermal coal will decline in NSW over the coming decades as aging coal-fired infrastructure is replaced with other forms of energy generation, however it also acknowledges that ending or reducing NSW thermal coal exports while there is still strong long-term global demand would likely have little or no impact on global carbon emissions. On this basis, the Proposed Modification is appropriately placed to continue to meet this existing global demand in line with the NSW Strategic Statement.

As an established underground operation, the proposed expansion of mining at UCC will also fit within the NSW Strategic Statement's plan for reducing the impact of mining on environmental and social outcomes, particularly in relation to its reduced air, noise, biodiversity, visual and other impacts in comparison to open cut coal mining operations.

The comprehensive environmental and social impact assessment undertaken for the Proposed Modification found that with the continued implementation of existing management and mitigation measures and the addition of the new measures identified, the Proposed Modification can proceed within acceptable environmental standards, without significantly increasing the impacts of the approved operations.
The economic assessment predicts that the Proposed Modification would provide a net benefit to NSW, estimated to be $292.6 million in net present value (NPV) terms, including both direct and indirect benefits.

7.0 References

Australasian Groundwater and Environmental Consultants Pty Ltd (AGE), 2022a. Ulan Coal Mines Modification 6 (MOD6) Groundwater Impact Assessment. AGE Report No. G1985G, unpublished report prepared for Glencore Coal Assets Australia – Ulan Coal Mine February 2022.

Australasian Groundwater and Environmental Consultants Pty Ltd (AGE), 2022b. Ulan Coal Mine Annual Groundwater Review 2021. AGE Report No. UCM5007.001, unpublished report prepared for Glencore Coal Assets Australia – Ulan Coal Mine March 2022.

Glencore, 2021. Water Management Plan (ULNCX-111515275-99, version 10.0).

Imrie J, 2019. Changing land use in an uncertain climate: impacts on surface water and groundwater in the Goulburn River, NSW'. Doctoral Thesis submitted to the Australian National University.

Murray-Darling Basin Authority, 2023. Murray-Darling Basin Plan. https://www.mdba.gov.au/water-management/basin-plan

NSW Department of Environment and Conservation, 1997. *Aboriginal Heritage Standards and Guidelines Kit*.

NSW Department of Environment, Climate Change and Water (DECCW), 2010a. *Archaeological Investigation of Aboriginal Objects in New South Wales*.

NSW Department of Environment, Climate Change and Water (DECCW), 2010b. *Aboriginal Cultural Heritage Consultation Requirements for Proponents*.

NSW Department of Industry, 2019. NSW MDB Porous and Fractured Rock Groundwater Status Update. Downloaded from: https://www.industry.nsw.gov.au/__data/assets/pdf_file/0004/270949/groundwater-status-update.pdf on 6 October 2021.

NSW Department of Planning and Environment (DPE), 2023. Improvements to the Biodiversity Offsets Scheme. Webpage accessed 13 February 2023. https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/improvements-to-the-biodiversity-offsets-scheme

NSW Department of Planning and Environment (DPE), 2023. *Social Impact Assessment Guideline*.

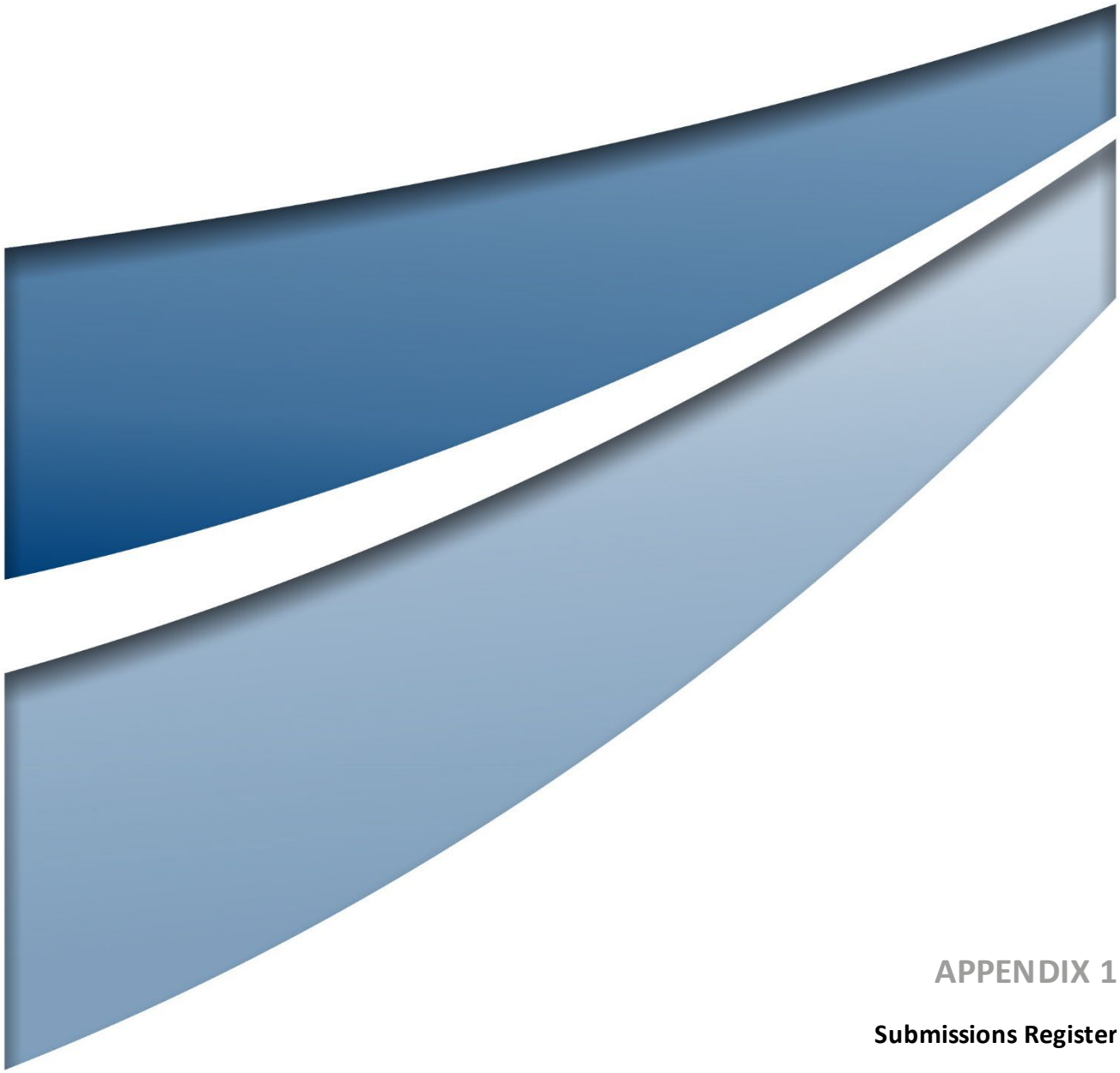
NSW Department of Planning and Environment (DPE), 2022. *State significant development guidelines – preparing a submissions report. Appendix C to the state significant development guidelines*. Dated October 2022.

NSW Office of Environment and Heritage (OEH), 2011. *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*.

State of NSW, 2020a. *Strategic Statement on Coal Exploration and Mining in NSW*.

State of NSW, 2020b. *Net Zero Plan Stage 1: 2020–2030*.

Umwelt (Australia) Pty Limited, 2022. Ulan Coal Modification 6 – Underground Mining Extension Modification Report. Unpublished document prepared for Ulan Coal Mines Pty Limited.



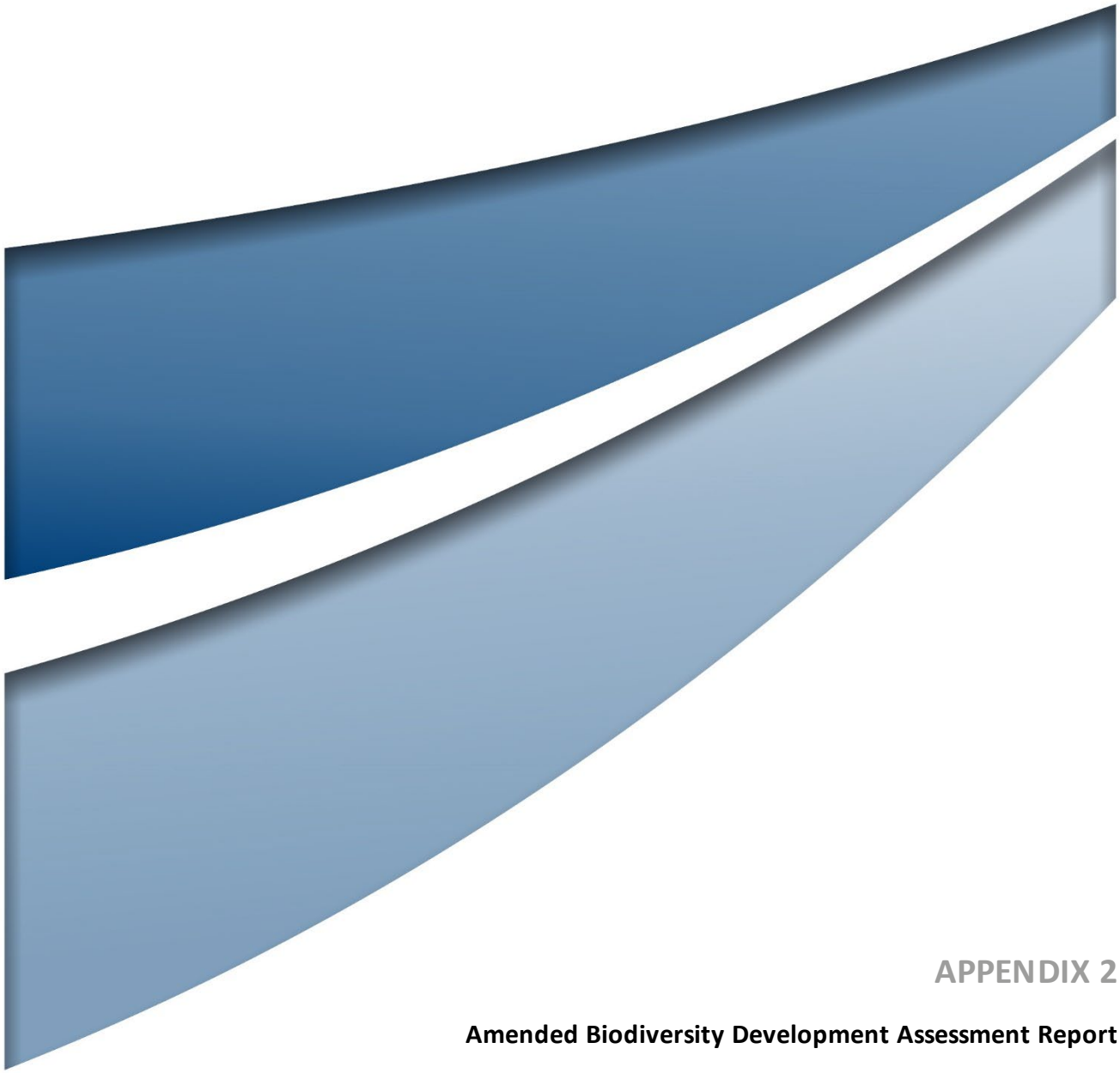
APPENDIX 1

Submissions Register

Table A.1 Submissions Register

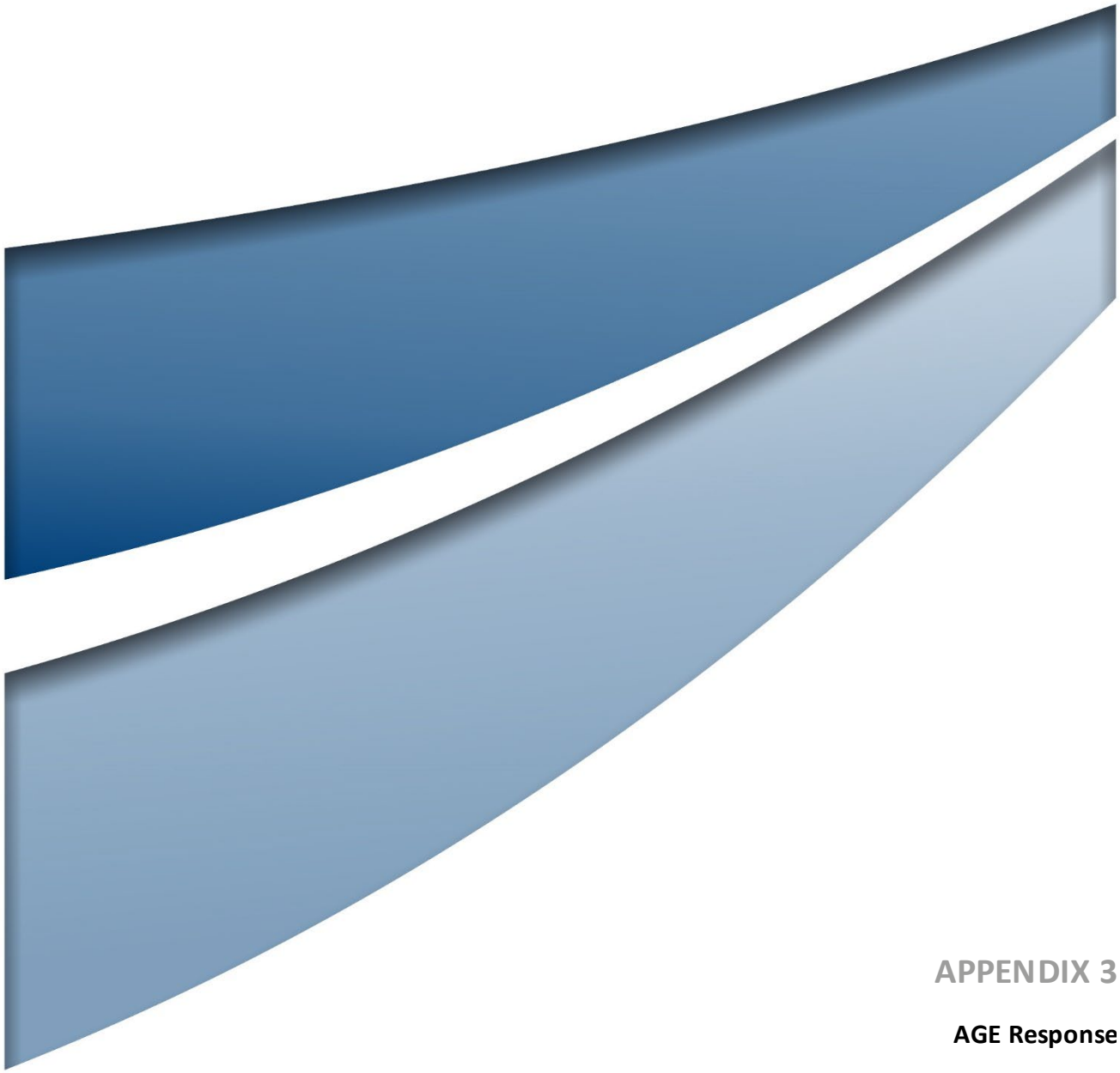
Group	Name	Submitter ID	Section where issues addressed
Government	Department of Planning and Environment – Crown Lands	-	**Section 4.1**
	Department of Planning and Environment – Water	-	**Section 4.2**
	Department of Planning and Environment – Biodiversity, Conservation and Science Directorate (BCS)	-	**Section 4.3**
	Department of Regional NSW – Mining, Exploration and Geoscience and Resources Regulator	-	**Section 4.4.1** and **Section 4.4.2**
	Department of Primary Industries – Agriculture	-	**Section 4.5**
	NSW Environment Protection Authority	-	**Section 4.6**
	Transport for NSW	-	**Section 4.7**
	Heritage NSW	-	**Section 4.8**
	Mid-Western Regional Council	-	**Section 4.9**
Organisations/ Interest Groups	Rylstone District Environment Society	S-52213457	**Section 5.0**
	Healthy Rivers Dubbo	S-52244736	**Section 5.0**
	Lithgow Environment Group	S-52394964	**Section 5.0**
	Bathurst Community Climate Action Network	S-52436206	**Section 5.0**
	Birdlife Southern NSW	S-52561206	**Section 5.0**
	Environmentally Concerned Citizens of Orange	S-52575962	**Section 5.0**
	Climate Change Balmain – Rozelle	S-52576459	**Section 5.0**
	Central West Environment Council	S-52609706	**Section 5.0**
	Wollar Progress Association	S-52609711	**Section 5.0**
	Inland Rivers Network	S-52612708	**Section 5.0**
	Water for Rivers	S-52614707	**Section 5.0**
	Lock the Gate Alliance	S-52630459	**Section 5.0**
	Mudgee District Environment Group	S-52642956	**Section 5.0**
	Wellington Valley Wiradjuri Aboriginal Corporation	S-52632708	**Section 5.0**
Individuals	Derek Finter	S-51917229	**Section 5.0**
	Lyn Coombe	S-52149710	**Section 5.0**
	Peter Bryant	S-52158218	**Section 5.0**
	Ibrahim Farag	S-52159208	**Section 5.0**
	Don White	S-52161211	**Section 5.0**
	Withheld	S-52226213	**Section 5.0**
	Withheld	S-52256706	**Section 5.0**
	Elisabeth Brasseur	S-52300208	**Section 5.0**
	Dianne Thompson OAM	S-52369207	**Section 5.0**
	Julie Hunter	S-52397706	**Section 5.0**
	Simon Clough	S-52437711	**Section 5.0**
	Withheld	S-52444706	**Section 5.0**

Group	Name	Submitter ID	Section where issues addressed
	Withheld	S-52445207	**Section 5.0**
	Withheld	S-52447208	**Section 5.0**
	Withheld	S-52448721	**Section 5.0**
	Withheld	S-52474956	**Section 5.0**
	Julia Imrie	S-52499972	**Section 5.0**
	Withheld	S-52503214	**Section 5.0**
	Margaret Cameron	S-52503714	**Section 5.0**
	John Clarke	S-52524456	**Section 5.0**
	Anne Reeves	S-52524710	**Section 5.0**
	Les Johnston	S-52614212	**Section 5.0**
	Beverley Smiles	S-52615206	**Section 5.0**
	Withheld	S-51138978	**Section 5.0**
	Withheld	S-51311207	**Section 5.0**
	Rabin Choudhury	S-51312965	**Section 5.0**
	Withheld	S-51546706	**Section 5.0**
	Withheld	S-51563959	**Section 5.0**
	Jason Campbell	S-51915461	**Section 5.0**
	Withheld	S-52032961	**Section 5.0**
	Withheld	S-52442458	**Section 5.0**
	Withheld	S-52443710	**Section 5.0**
	Withheld	S-52472457	**Section 5.0**
	Withheld	S-52496216	**Section 5.0**
	Withheld	S-52498706	**Section 5.0**
	Emily Pease	S-52545706	**Section 5.0**
	Mark Fogarty	S-52581208	**Section 5.0**
	Bradley Bliss	S-52632711	**Section 5.0**



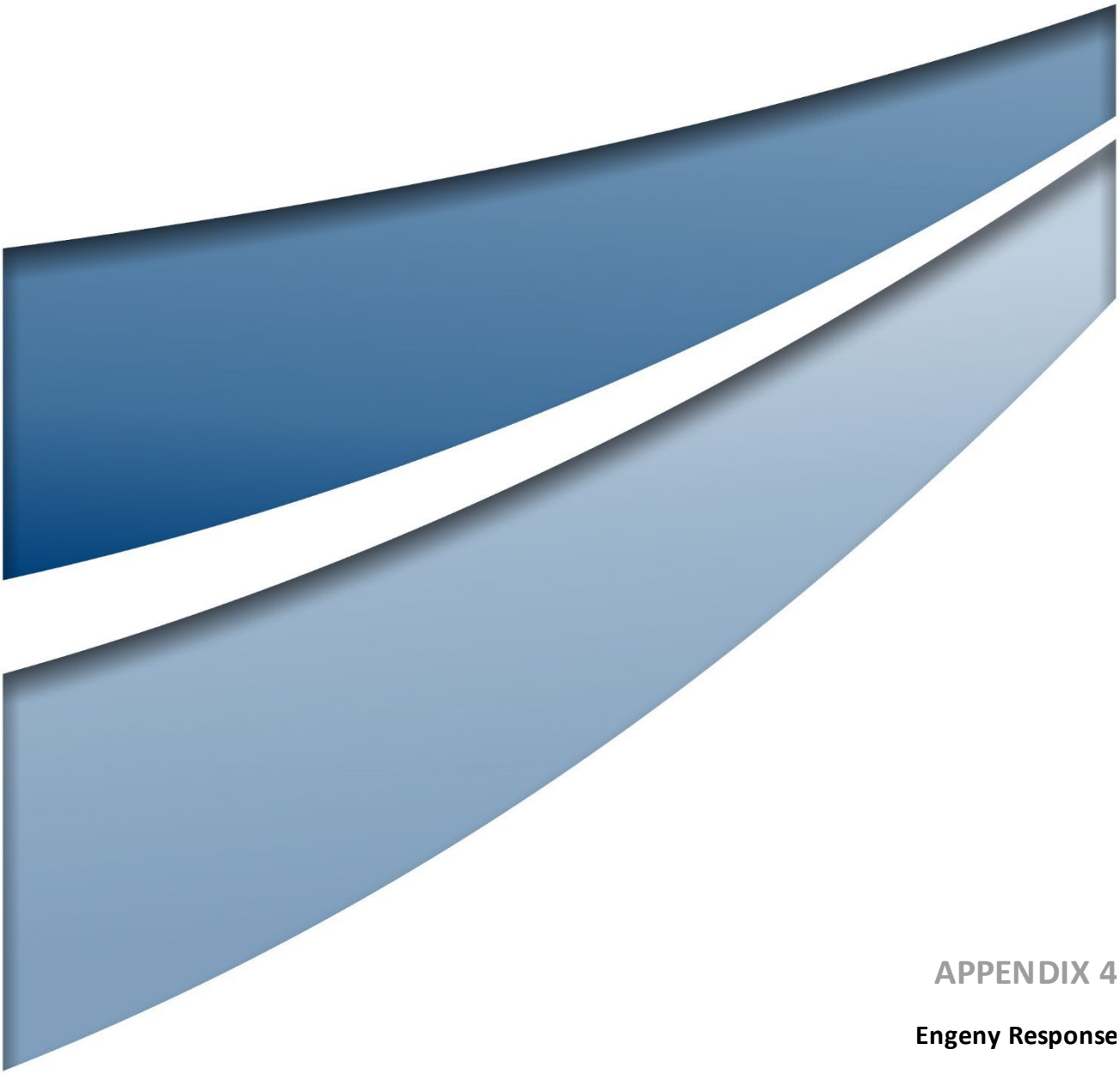
APPENDIX 2

Amended Biodiversity Development Assessment Report



APPENDIX 3

AGE Response



APPENDIX 4

Engeny Response

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