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Your ref: MP08_0184-Mod-6

Mr Jack Turner
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Dear Mr Turner

Ulan Coal Mine – Underground Mining Extension – Modification 6 – Response to Submissions

Thank you for your e-mail dated 16 August 2023 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment (DPE) inviting advice on the Ulan Coal Mine – modification 6 Response to Submissions (RTS).

BCS has reviewed the RTS Report including Appendix 2 - Amended Biodiversity Development Assessment Report (BDAR), Appendix 3 – Groundwater, and Appendix 4 – Surface water, along with the updated Biodiversity Assessment Method Calculator (BAM-C) cases and spatial data. Our review has identified some issues raised in our advice dated 31 January 2023 remain unresolved.

Priority residual issues are as follows:

- Unlike the worst-case impact assessment, the development footprint area has a defined area, as required by the BAM.
- Provide additional evidence to demonstrate adequate avoidance and minimisation measures to reduce potential impacts on biodiversity values is needed, especially direct impacts on serious and irreversible (SAII) entities.
- Revise the BDAR, BAM-C cases, and spatial data to ensure that all data is accurate and consistent, and biodiversity credit calculations are correct.
- Revise species polygons for the threatened microbats and *Commersonia procumbens* accuracy and consistency to ensure species credits are calculated correctly.

BCS's biodiversity recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. The resolved issues from our 31 January 2023 response are outlined in **Attachment C**.

If you have any questions about this advice, please contact Kate Tierney, Senior Conservation Planning Officer, via kate.tierney@environment.nsw.gov.au or (02) 4904 2782.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'D. Tierney'.

Debbie Love
Acting Director North West
Biodiversity, Conservation and Science Directorate

20 September 2023

Attachment A – BCS's Recommendations

Attachment B – BCS's Detailed Comments

Attachment C – Resolved issues from BCS's response of 31 January 2023

BCS's recommendations

Ulan Coal Mine – Underground Mining Extension – Modification 6 – Response to Submissions

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|--------|--|
| BAM | Biodiversity Assessment Method |
| BAM-C | Biodiversity Assessment Method Calculator |
| BC Act | <i>Biodiversity Conservation Act 2016</i> |
| BCS | Biodiversity, Conservation and Science Directorate |
| BDAR | Biodiversity Development Assessment Report |
| BMP | Biodiversity Management Plan |
| CEEC | Critically Endangered Ecological Community |
| DPE | Department of Planning and Environment |
| EIS | Environmental Impact Statement |
| PCT | Plant Community Type |
| RTS | Response to Submissions |
| SAIL | Serious and Irreversible Impacts |
| SMART | specific, measurable, achievable, realistic, timebound |

Recommendations – for the consent authority

- 1.1 The staged approach should be applied, and the worst-case / maximum parameter approach be removed from consideration.
- 1.2 1.2 If approved, the development consent conditions must require each stage to be offset prior to any impact occurring in that stage, in accordance with section 7.13 of the *Biodiversity Conservation Act 2016* (BC Act). The credits to be retired for each stage must also be included in conditions of consent. Any amendments to credit retirement must be undertaken in consultation with BCS
- 6.1 An independent expert should be engaged to provide advice on the impacts of subsidence on hydrology and groundwater.
- 7.1 If the project is approved, consent conditions should require management plans and strategies to be reviewed and adapted to ensure compliance with SMART principles and the inclusion of quantifiable triggers for adaptive management.
- 7.2 BCS should be consulted during review of the biodiversity management plan and preparation of the microbat management plan.

Recommendations – for the accredited assessor

- 2.1 The development footprint requires further refinement to demonstrate avoidance and minimisation of impacts on key biodiversity values.
- 2.2 Detail the avoidance measures that have been used to refine the location of the proposal.
- 3.1 Review the BDAR, BAM-C cases and spatial data to ensure that all data is consistent.

- 4.1 Revise the threatened microbat species polygons in Figure 6.9 to ensure accuracy and consistency with Figure 3.12.
- 5.1 Revise the species polygon for *Commersonia procumbens* in both Figures 3.13 and 6.6 to include all areas of PCTs 478, 479 and 481 within the development footprint.

BCS's detailed comments

Ulan Coal Mine – Underground Mining Extension – Modification 6 – Response to Submissions

- 1 The staged approach should be implemented, and the worst-case approach removed from consideration

BCS notes that the proposal now includes the following stages:

- Area 1 (with nine contingency options) including
 - Stage 1A
 - Stage 1B
 - Stage 1C
- Area 2
- Area 3 (with the contingency of Option A) including
 - Stage 3A
 - Stage 3B
- Area 4.

BCS has reviewed the Biodiversity Assessment Method calculator (BAM-C) cases which include the following finalised cases:

- Ulan Modification 6 Development Footprint – Stage 1A (case 00040994)
- Ulan Modification 6 Development Footprint - Stage 1B (case 00041125)
- Ulan Modification 6 Development Footprint - Stage 1C (case 00041126)
- Ulan Modification 6 Development Footprint – Stage 2 (case 00041127)
- Ulan Modification 6 Development Footprint - Stage 3A (case 00041128)
- Ulan Modification 6 Development Footprint – Stage 3B (case 00041131)
- Ulan Modification 6 Development Footprint - Stage 4 (case 00041129)
- Ulan Modification 6 Development Footprint - Worst Case V2 (case 00041130)

BAM-C cases must be created to determine the number and class of biodiversity credits required by the BAM for offsetting. There is no finalised BAM-C case for either the nine contingency options for Area 1, or Option A, the contingency option for Area 3.

The BAM-C cases allow for the following flexibility of credit retirement:

- Any combination of the BAM-C cases for Stage 1A, Stage 1B, Stage 1C, Area 2, Stage 3A, Stage 3B or Area 4, OR
- Retirement of the whole worst case development footprint

To retire any other areas (including the nine contingency options for Area 1 or Option A), a new modification would need to be prepared accompanied by a BDAR and relevant BAM-C cases.

Section 6 of the biodiversity development assessment report (BDAR) presents an assessment of the worst-case direct impacts. A separate biodiversity assessment method calculator (BAM-C) case has been submitted for the worst-case approach. Section 4.3 of the response to submissions report (RTS) identifies that this is fundamentally very similar to the approach previously referred to as the maximum parameters approach.

In our response dated 31 January 2023, BCS was very clear that we did not support the maximum parameters approach and it should not be implemented.

BCS does not support either the maximum parameters or the worst-case approaches because:

- Section 2 of the BAM requires the BDAR to clearly identify the boundary of the subject land including the operational footprint for the development. The worst-case approach has not clearly defined the area assessed. For example:
 - Figure 6.1 in the updated BDAR is intended to show the worst-case impact area but it is unclear which area(s) are included in this worst-case impact area as the legend does not include this item.
 - Appendix G in the updated BDAR contains tables which show the process used for determining the worst-case direct impacts. This assessment does not consider each option individually (i.e., Area 3 or Option A) to determine the option with the worst impact, but rather assesses both for the total area (in hectares) of each plant community type (PCT) for the largest area of each vegetation zone. These calculations do not clearly articulate which area (out of the options for Areas 1 and 3) would be determined to have the worst impact and therefore form part of the worst-case direct impact area.
 - The updated BDAR does not identify which of the options would result in the worst-case direct impact on key biodiversity values (including white box – yellow box – Blakely's red gum critically endangered ecological community [box-gum CEEC]) from the flexibility options available including Area 1 and nine contingency options, and Area 3 or the contingency Option A.
- Assessors and proponents must operate within the Biodiversity Offset Scheme (BOS) framework. Options must be capable of being assessed in accordance with the BAM, including maintaining an auditable and traceable log of the credit requirements. It is unclear how the worst-case BAM-C can be used to trace and audit the retirement of biodiversity credits.
- There is potential for all areas included in the worst-case calculation to be cleared if this is included in the conditions of consent.

Recommendation – for the consent authority

- 1.1 The staged approach should be applied, and the worst-case / maximum parameter approach be removed from consideration.
- 1.2 If approved, the development consent conditions must require each stage to be offset prior to any impact occurring in that stage, in accordance with section 7.13 of the *Biodiversity Conservation Act 2016* (BC Act). The credits to be retired for each stage must also be included in conditions of consent. Any amendments to credit retirement must be undertaken in consultation with BCS.

2 Effort to avoid and minimise impacts to biodiversity is inadequate

BCS has reviewed the updated BDAR including sections 1.1 (development footprint), 1.3 (assessment of worst-case impact) and 4.1.1 (site selection and planning). Further refinements to the development footprint have been undertaken since the original BDAR. The amended BDAR outlines that the key focus of the refinement of the footprint was to reduce the impact on the box-gum CEEC. Refinements to Area 2 (access track) were also undertaken to reduce potential impacts on large-eared pied bat and eastern cave bat species polygons.

Figures 4.1 and 4.2 of the amended BDAR show the proposed development layouts for November 2022 and April 2023 respectively. BCS notes that the changes proposed to the development layout are as follows:

- The access track buffer previously applied to Area 2 has been replaced with six track construction facilities,
- Area 3 has been relocated, and
- Areas A and C have been removed as options, selecting Area B as the only alternative to Area 3.

Area 2 - proposed access track, with six track construction facilities

BCS notes that fixing the location of Area 2 has provided greater certainty surrounding the impacts for this portion of the development footprint. However, it is noted that 4 of the 6 track construction facilities have been located within box-gum CEEC.

No amendments have been proposed to the location of the access track to avoid or minimise impact on box-gum CEEC. In addition, no rationale is provided for why the access track cannot be relocated to avoid or minimise impacting on the CEEC. BCS considers that amendments to the location of the access track, especially the middle section, could further avoid or minimise impacts on box-gum CEEC.

Area 3 - infrastructure corridor including a vent shaft that connects existing approved infrastructure footprints to Area 1

BCS notes that the relocation of Area 3 has reduced the impact on box-gum CEEC. However, Area 3 is still located in the CEEC, and the reduction in total impact on box-gum CEEC is due to the reduction in overall area of Area 3.

There is a lack of information presented in the BDAR regarding the constraints and possible options available for Area 3. Due to this, it is difficult to determine if avoidance and minimisation has been undertaken as it is unclear why Area 3 was able to be relocated and if it was possible to relocate Area 3 in a location without box-gum CEEC.

Area B - infrastructure pad

BCS notes that the selection of Area B provides greater certainty surrounding the impacts for this portion of the development footprint. Figure 4.2 of the amended BDAR shows that Area B does not include box-gum CEEC.

Figure 6.5 of the amended BDAR shows the extent of box-gum CEEC relative to the development footprint. Whilst Area B is not shown on this figure, comparison with figure 4.2 indicates that the location of Area B is almost entirely located within box-gum CEEC. The information presented in Figure 4.2 showing Area B not containing any box-gum CEEC is inconsistent with figure 6.5.

Without any detail about the constraints for the location of Area B, it is not possible to demonstrate that selection of this location within box-gum CEEC has avoided or minimised impact on key biodiversity values.

BCS's response of 31 January 2023 included recommendations (5.1 and 5.2) relating to refining the location of the proposal to avoid direct and indirect impacts on native vegetation, threatened species, threatened ecological communities and their habitats, and detailing these avoidance measures which have been used. These recommendations have not been adequately addressed.

Recommendations – for the accredited assessor

- 2.1 The development footprint requires further refinement to demonstrate avoidance and minimisation of impacts on key biodiversity values.
- 2.2 Detail the avoidance measures that have been used to refine the location of the proposal.

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

BCS has reviewed the area calculations in the updated BDAR, BAM-C cases and spatial data and has identified inconsistencies with these calculations.

For example, section 1.3 in the updated BDAR identifies the maximum potential impact on native vegetation as 26.1 hectares. However, in BAM-C Case Ulan Modification 6 Development Footprint - Worst Case V2 (00022258/BAAS18115/23/00041130) the total area identified is 35.4 hectares.

There are also discrepancies between the BDAR and spatial data. For example, Plot P07 is identified in both zone 4 (PCT 478) and zone 5 (PCT 479) in section 3.2.1.4 and 3.2.1.5 of the BDAR. However, the spatial data does not identify Plot P07 as occurring in zone 5.

A full review of the BDAR, BAM-C and spatial data is needed to identify and rectify all inconsistencies.

Recommendation – for the accredited assessor

- 3.1 Review the BDAR, BAM-C cases and spatial data to ensure that all data is consistent.

4 Species polygons for large-eared pied bat and eastern cave bat must be clarified and may need revision.

BCS has reviewed figure 3.12 in the amended BDAR. It is noted that the species polygon for large-eared pied bat and eastern cave bat is identified as being located within PCT 281 which occurs within 2 kilometres of cliff line habitat, in the development footprint. Figure 6.9 shows the threatened microbat species polygons for the worst-case impact scenario. Figure 6.9 is not consistent with the species polygon shown in Figure 3.12.

Figure 6.9 should be revised to ensure the species polygon identifies all areas of PCT 281 within 2 kilometres of cliff line habitat in the development footprint.

Recommendation – for the accredited assessor

- 4.1 Revise the threatened microbat species polygons in figure 6.9 to ensure accuracy and consistency with figure 3.12.

5 The species polygons for *Commersonia procumbens* require review

Table 6.4 of the amended BDAR (species habitat polygons approach for species credit species in the worst-case impact area) associates the species polygon for *Commersonia procumbens* with PCTs 478, 479, and 481.

Figure 3.13, which shows the threatened flora species polygons, does not include a species polygon for *Commersonia procumbens* despite part of Area 1 being mapped as containing PCT 478 in the vegetation community mapping in figure 3.1. Similarly, figure 6.6 which shows the worst-case impact scenario does not identify any of Area 1 as part of the species polygon for *Commersonia procumbens*.

The species polygon for *Commersonia procumbens* should be revised to include all areas of PCTs 478, 479 and 481 within the development footprint.

Recommendation – for the accredited assessor

5.1 Revise the species polygon for *Commersonia procumbens* in both Figures 3.13 and 6.6 to include all areas of PCTs 478, 479 and 481 within the development footprint.

6 Independent advice on impacts of subsidence on hydrology and groundwater should be sought

BCS is unable to provide advice on subsidence, aspects of hydrology/groundwater (presented in section 5.2.1 of the amended BDAR) and interpret the niche and complex data associated with these reports in this advice. We recommend that DPE engage an independent expert to provide advice on these matters.

Recommendation – for the consent authority

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

7 Management plans should adhere to SMART principles and enable adaptive management

The amended BDAR identifies a number of plans to be revised or prepared, including,

- Biodiversity management plan
- Microbat management plan
- Water and hydrology management strategy

These plans and strategy should include specific, measurable, achievable, realistic, timebound (SMART) principles and the inclusion of quantifiable triggers for adaptive management in accordance with section 4.4.7 of the BAM Operational Manual – Stage 2.

Recommendation – for the consent authority

- 7.1 If the project is approved, consent conditions should require management plans and strategies to be reviewed and adapted to ensure compliance with SMART principles and the inclusion of quantifiable triggers for adaptive management.
- 7.2 BCS should be consulted during review of the biodiversity management plan and preparation of the microbat management plan.

Resolved issues - BCS's comments

Ulan Coal Mine – Underground Mining Extension – Modification 6 – Response to Submissions

| Issue (BCS response 31 January 2023) | BCS review | BCS comment |
|--|---|---|
| 1 Amendment to the locations assessed in the BDAR following approval will require a project modification | <p>BCS has reviewed section 1.1, section 1.3 and section 6.0 of the updated BDAR. Section 1.3 of the updated BDAR outlines that the development footprint has been assessed and credits calculated in accordance with the BAM. The updated BDAR acknowledges that any variation to this development footprint will require a further modification application including an amended and re-certified BDAR and revised BAM-C.</p> <p>Any subsequent modification application can use existing information provided that the detailed design option has been appropriately surveyed and assessed for relevant biodiversity values in the previous modification, and that survey results are current. BCS is satisfied with this approach</p> | No further action is required to demonstrate that amendment to the locations assessed in the BDAR following approval will require project modification. |
| 4 Confirm that all proposed surface impacts have been included within the development footprint | <p>In the BCS response dated 31 January 2023, clarification was sought regarding the inclusion of the infrastructure pad options, being Areas A, B, C and D.</p> <p>BCS has reviewed sections 1.1, 1.3 and 6 of the updated BDAR. BCS notes that the development footprint consists of Area 1 in three stages (1A, 1B and 1C), Area 2, Area 3 in two stages (3A and 3B), and Area 4. BCS notes that the total development footprint in the updated BDAR is 23 hectares.</p> <p>BCS understands that none of the infrastructure pad options are included in the development footprint. No BAM-C case has been prepared for these locations and the proposal will not impact upon these areas. BCS is satisfied with this approach.</p> | No further action is required to demonstrate that all proposed surface impacts have been included within the development footprint. |

| <p style="text-align: center;">Issue (BCS response 31 January 2023)</p> | <p style="text-align: center;">BCS review</p> | <p style="text-align: center;">BCS comment</p> |
|---|---|---|
| | <p>The updated BDAR acknowledges that any variation to the development footprint will require a modification, to be accompanied by an updated BDAR, revised BAM-C and associated plot and spatial data.</p> | |
| <p>6 Justification for removal of <i>Monotaxis macrophylla</i> from the candidate species list is not adequate.</p> | <p>BCS has reviewed the updated BDAR including Section 2.3.4.1, Table 3.6, Section 3.3.6, Table 6.4, Appendix A (Table A1.2) of the amended BDAR. BCS is satisfied with the approach of assuming presence for <i>Monotaxis macrophylla</i> in all associated PCTs within the development footprint.</p> | <p>No further action is required to justify the removal of <i>Monotaxis macrophylla</i> from the candidate species list.</p> |
| <p>7 Justification for removal of striped legless lizard from the candidate species list is not adequate.</p> | <p>BCS has reviewed the RTS and notes that the revised development footprint does not include any PCTs associated with the striped legless lizard. BCS is satisfied that striped legless lizard is no longer a candidate species.</p> | <p>No further action is required to justify the removal of the striped legless lizard from the candidate species list.</p> |
| <p>8 Justification for removal of grey-headed flying-fox from the candidate species list is not adequate.</p> | <p>BCS has reviewed the updated BDAR including table 3.6. BCS is satisfied with the justification for the removal of grey-headed flying-fox as a candidate species due to the absence of breeding camps within or nearby the Development Footprint.</p> | <p>No further action is required to justify the removal of grey-headed flying-fox from the list of candidate species.</p> |
| <p>9 The targeted survey effort undertaken for threatened flora is inadequate.</p> | <p>BCS has reviewed the updated BDAR including section 2, figures 2.1 to 2.9 and Appendix B (Table B1.2). BCS is satisfied that the survey effort for <i>Acacia ausfeldii</i>, <i>Prasophyllum petilum</i>, <i>Commersonia procumbens</i> and <i>Tylophora linearis</i> are adequate.</p> | <p>No further action is required to increase survey effort for <i>Acacia ausfeldii</i>, <i>Prasophyllum petilum</i>, <i>Commersonia procumbens</i> and <i>Tylophora linearis</i>.</p> |
| <p>10 The targeted survey effort undertaken for some threatened fauna is inadequate.</p> | <p>BCS has reviewed the updated BDAR including section 2, figures 2.1 to 2.9 and Appendix B (Table B1.2). BCS is satisfied that the surveys for bush stone-curlew, gang-gang cockatoo, square-tailed kite, barking owl, masked owl, powerful owl and koala are adequate.</p> | <p>No further action is required to increase survey effort for bush stone-curlew, gang-gang cockatoo, square-tailed kite, barking owl, masked owl, powerful owl or koala.</p> |
| <p>11 Survey timing for some candidate-species credit</p> | <p>BCS has reviewed the updated BDAR including section 2.3.4.2, figures 2.1 to 2.9 and Appendix B (Table B1.2). BCS is satisfied that the relevant</p> | <p>No further action is required to survey for gang-gang</p> |

| <p style="text-align: center;">Issue (BCS response 31 January 2023)</p> | <p style="text-align: center;">BCS review</p> | <p style="text-align: center;">BCS comment</p> |
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| <p>species should be adequately justified.</p> | <p>surveys were undertaken during the appropriate survey period for gang-gang cockatoo, square-tailed kite, powerful owl and masked owl.</p> | <p>cockatoo, square-tailed kite, powerful owl & masked owl during their respective survey periods.</p> |
| <p>12 The targeted survey effort for pink-tailed legless lizard is inadequate.</p> | <p>BCS have reviewed section 2.3.4 and Table 2.3 of the amended BDAR. It is noted that within the development footprint there is no suitable habitat for the pink-tailed legless lizard. There is no rocky habitat (habitat constraint) identified within PCT 281 (PCT associated with the species). As a result, no targeted survey for Pink-tailed legless lizard is required.</p> | <p>No further action is required to demonstrate absence of the pink-tailed legless lizard at the subject site.</p> |
| <p>15 Spatial layers for all species polygons in the 'maximum parameters' area have not been provided.</p> | <p>BCS are satisfied that the spatial files for the species polygons have been provided.</p> | <p>No further action is required to provide the spatial layers for the species polygons.</p> |
| <p>19 Cumulative impacts are not adequately assessed.</p> | <p>BCS has reviewed the response with regard to cumulative impacts not being adequately assessed in the submissions report. No further assessment on cumulative impacts is required.</p> | <p>No further action is required to assess cumulative impacts for the development.</p> |
| <p>20 The assessment of SAIL for White Box – Yellow Box – Blakely's Red Gum Woodland CEEC requires revision.</p> | <p>BCS has reviewed section 5.4 and Table 5.8 of the amended BDAR. Required information for the SAIL assessment of the proposal on Box Gum Woodland has been provided.</p> | <p>No further action is required to provide further information to address section 9.1.1 of the BAM.</p> |
| <p>21 Present information for decision-maker to determine SAIL for threatened species.</p> | <p>BCS has reviewed section 5.4 and table 5.9 of the updated BDAR. Required information for the SAIL assessment of the proposal on threatened species has been provided.</p> | <p>No further action is required to provide further information to address section 9.1.2 of the BAM.</p> |
| <p>22 Inconsistencies in the use of plots for vegetation zones between BAM-C assessments.</p> | <p>BCS has reviewed the plot data and the BAM-C. All plots have been entered into the relevant BAM-C cases for each vegetation zone.</p> | <p>No further action is required regarding the representative plot data entered into the BAM-C cases.</p> |

| Issue (BCS response 31 January 2023) | BCS review | BCS comment |
|---|---|---|
| 25 The BDAR should be certified by the accredited assessor. | BCS notes that the updated BDAR has been certified by the accredited assessor. | No further action is required to certify the BDAR. |
| 26 The mapping of the native vegetation extent requires revision. | BCS has reviewed Figure 1.8 to 1.10 in the updated BDAR. BCS is satisfied with the revisions to the native vegetation extent. | No further action is required to revise the native vegetation extent. |