Our ref: DOC19/1060332-4
Your ref: SSD-9349

Lauren Evans
Team Leader
Energy and Resource Assessments, Planning and Assessment Division
Department of Planning, Industry and Environment
320 Pitt Street
SYDNEY NSW 2001
lauren.evans@planning.nsw.gov.au

Dear Ms Evans

Glendell Continued Operations Project (SSD-9349) - Review of Environmental Impact Statement

I refer to your e-mail dated 4 December 2019 in which the Planning and Assessment Division (P&A) of the Department of Planning, Industry and Environment (the Department) invited Biodiversity and Conservation Division (BCD) for advice in relation to the Glendell Continued Operations Project (SSD-9349) Project.

BCD have reviewed the Environmental Impact Statement, including relevant appendices:

- Appendix 17: Surface Water Impact Assessment (GHD, 2019).
- Appendix 20: Biodiversity Development Assessment Report (Umwelt (2019a)
- Appendix 22: Aboriginal Cultural Heritage Assessment Report (ACHM, 2019)
- Appendix 24: Rehabilitation and Mine Closure Strategy (Umwelt (2019b)

BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Steven Cox, Senior Team Leader Planning, on 4927 3140 or via email at rog.hcc@environment.nsw.gov.au

Yours sincerely

20 February 2020

LUCAS GRENADIER
A/Director Hunter Central Coast Branch
Biodiversity and Conservation Division

Enclosure: Attachments A and B

Attachment A

Biodiversity and Conservation Division (BCD) recommendations

Glendell Continued Operations Project (SSD-9349) – Review of Environmental Impact Statement

Biodiversity

1. BCD recommends that the 55 hectares of 'exotic vegetation' in the project area is re-assessed in accordance with the Biodiversity Assessment Method (BAM) to determine if it should be classified as native vegetation or exotic vegetation. All areas of native vegetation should be assessed in accordance with BAM, including collecting site data and running it through the BAM calculator.

2. BCD recommends that Tab 2 of the BAM calculator file is updated to include 'Rivers and streams'; as a landscape feature, to show that Yorks Creek crosses the proposed development footprint, and that the BAM calculator is re-run.

3. BCD recommends that the planted *Acacia pendula* trees in the Project Area are assessed in accordance with BAM 2017 to determine if they generate ecosystem or species credits.

4. BCD recommends that the proponent provide additional information to meet all requirements of the Biodiversity Development Assessment Report.

5. BCD recommends that the proponent undertake survey of the Project Area for *Delma impar* using survey techniques from the *Survey guidelines for Australia's threatened reptiles* (Department of Sustainability, Environment, Water, Populations and Communities, 2011).

6. BCD accepts the Category 1- exempt land, and Category 2-regulated land mapping in the development footprint area of the project.

Rehabilitation and Mine Closure Strategy

7. BCD recommends that the mine rehabilitation plan includes the management of aggressive exotic species that, if established, would lead to poor rehabilitation outcomes.

8. BCD recommends Port Jackson Fig (*Ficus rubiginosa*) is included in the planting mix for native woody vegetation in post-mine rehabilitation to provide food and shelter for threatened species.

9. BCD recommends a consent condition is included that requires the 'Rehabilitation and Mine Closure Strategy' to be developed in consultation with the Biodiversity and Conservation Division.

Aboriginal cultural heritage

10. BCD is satisfied that consultation with the Aboriginal community has been undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010.* BCD notes that consultation with one registered Aboriginal party is ongoing and should conclude prior to the preparation of the response to submissions report.

11. BCD is satisfied that the significance assessment of the Aboriginal cultural heritage values of the project area have been adequately accessed, as well as any potential impacts on those values.

12. BCD recommends that the *Mt Owen Open Cut, Aboriginal Cultural Heritage Management Plan, V4 (XMO SD PLN 0060), 29 May 2018,* is revised to include all additional Aboriginal sites and cultural values.

Flooding and flood risk

13. BCD recommends that a stream stability monitoring program be developed for the Lower Bettys Creek diversion.

14. The proponent should provide Council with flood behaviour data from its flood impact assessment. Flood data to be handed over should include the GIS files for the inundation extents and TUFLOW 2dm output files suitable for importing into the WaterRide viewing package.

Attachment B

Biodiversity and Conservation Division (BCD) detailed comments

Glendell Continued Operations Project (SSD-9349) – review of Environmental Impact Statement

Biodiversity

1. Areas of 'exotic vegetation' should be assessed in accordance with the Biodiversity Assessment Method

Section 3.2.2. and Figure 3.1 of the Biodiversity Development Assessment Report (BDAR) (Appendix 20 of the Environmental Impact Statement) identified and mapped approximately 55 hectares of 'exotic vegetation', with these areas stated as typically containing greater than 50% perennial weed species cover. Under the BAM 'native vegetation' is vegetation that contains native species. There is no minimum percent native species to identify exotic vegetation (unlike the previous BBAM where >50% weed species is considered exotic vegetation). All areas of 'native vegetation' (that is areas containing native species) are required to be assessed under the Biodiversity Assessment Method (BAM). Only areas of vegetation containing 100% exotic species should be considered non-native vegetation.

Vegetation plots should be undertaken across the 55 hectares of exotic vegetation and be run through the BAM calculator to determine whether the vegetation generates ecosystem credits.

Recommendation 1

BCD recommends that the 55 hectares of 'exotic vegetation' in the project area is re-assessed in accordance with the Biodiversity Assessment Method (BAM) to determine if it should be classified as native vegetation or exotic vegetation. All areas of native vegetation should be assessed in accordance with BAM, including collecting site data and running it through the BAM calculator.

2. Landscape features should include Yorks Creek

Yorks Creek is a Strahler 4th-order stream that flows through the proposed development footprint. However, it has not been included in the Biodiversity Assessment Method (BAM) calculation. This detail can be added in the calculator file in Tab 2 'Site context' under landscape features by selecting 'rivers and streams', then adding the name of the creek as free text. BCD recommends that those details are added to the calculator file and the calculator file is re-run.

Recommendation 2

BCD recommends that Tab 2 of the BAM calculator file is updated to include 'Rivers and streams'; as a landscape feature, to show that Yorks Creek crosses the proposed development footprint, and that the BAM calculator is re-run.

3. *Acacia pendula* should be assessed in accordance with BAM 2017

The 13 planted *Acacia pendula* trees in the development footprint have not been correctly assessed. Table 3.7 of the Biodiversity Development Assessment Report (BDAR) states that these plants were assessed using the 'Streamlined assessment module for planted vegetation' from Appendix D of exhibition draft BAM 2019 and they do not generate species credits.

However, the draft BAM 2019 has neither been finalised nor gazetted. As the project is being assessed under BAM 2017 the streamlined assessment method cannot be applied to the project. Therefore, the 13 planted *Acacia pendula* should be assessed in accordance with BAM 2017. The following information is required for the 13 planted *Acacia pendula;*

- A description of the plants, including photos, and a description of how they compare with the NSW Scientific Committee Final Determination for the Endangered Population of *Acacia pendula* in the Hunter Catchment
- A map of the location of the plants (provided as a figure and as GIS shapefiles)
- A description of the Plant Community Type that the planted Acacia pendula trees occur in, and whether that PCT generated ecosystem credits.

Recommendation 3

BCD recommends that the planted *Acacia pendula* trees in the Project Area are assessed in accordance with BAM 2017 to determine if they generate ecosystem or species credits.

4. Additional information is required to complete the BDAR

The following data required by the BAM was not provided:

- Clarification on when the humidity records given in Table 2.4 (Weather Conditions for Species-Credit Surveys) were taken.
- A map showing the location of the Tiger Orchid (*Cymbidium canaliculatum*) and Weeping Myall (*Acacia pendula*) plants in the Project Area.
- Consideration of *Thesium australe* and *Dichanthium setosum* potential to occur in the Project Area and whether these species may occur on site and require targeted survey.
- A map showing the connectivity elements and corridors discussed in section 5.2.1 of the BDAR, as required by Sections 4.2.1.8 – 4.2.1.11, Section 5.2 and Table 25 of the BAM
- An MS-Excel spreadsheet of plant species recorded and the quadrats in which they were recorded as described in Table 25 in the BAM
- Shapefiles of stages of the project and the final project footprint that are shown in Figures 3.2 to 3.6 of the main report of the EIS should be provided; as per Table 25 of the BAM.

Recommendation 4

BCD recommends that the proponent provide additional information to meet all requirements of the Biodiversity Development Assessment Report.

5. Further assessment of Striped legless lizard (*Delma impar*) is required

BCD considers that the targeted survey to determine the presence of the Striped legless lizard (*Delma impar*) in the Project Area is insufficient. According to the BDAR, in Table B.12, targeted surveys for this species were undertaken by searching 'loose bark, logs, hollow trunks and dead tree limbs for sheltering individuals' at twelve survey points as well as unspecified survey techniques over grassland habitat in the Project Area during threatened orchid surveys.

The striped legless lizard is '…usually found under logs, rocks and ground debris' (Cogger (2014) *Reptiles & Amphibians of Australia: Seventh Edition*; p. 393) rather than loose bark, hollow trunks and dead tree limbs.

The surveys undertaken also do not meet the Department of Environment and Conservation (DEC) draft survey requirements (2004) for reptiles, which include pitfall traps with drift nets and spotlighting. The DEC 2004 survey guidelines are required by the BAM for reptile species.

Striped legless lizards were found 15 kilometres to the west on the Maxwell Underground Project (SSD-9526) site in November and December 2018, using survey techniques in accordance with the DEC 2004 guidelines and the *Survey guidelines for Australia's threatened reptiles* (Department of Sustainability, Environment, Water, Populations and Communities, 2011). The Maxwell underground mine site occurs in the same IBRA subregion, and both sites include PCTs associated with *Delma impar*. BCD accepts the Commonwealth's guidelines as updated best-practise survey techniques for this species. BCD recommends that the proponent survey the Glendell Project Area using techniques from the Commonwealth's guidelines to test for the presence of this species.

Recommendation 5

BCD recommends that the proponent undertake survey of the Project Area for *Delma impar* using survey techniques from the *Survey guidelines for Australia's threatened reptiles* (Department of Sustainability, Environment, Water, Populations and Communities, 2011).

6. BCD is satisfied with the Category 1-exempt land and Category 2- regulated land mapping in the development footprint

BCD has reviewed the Category 1-exempt land and Category 2-regulated land mapping by the proponent in the development footprint area of the project. BCD has not reviewed the Category 1-exempt land and Category 2-regulated land in the larger and surrounding Project Area.

Recommendation 6

BCD accepts the Category 1- exempt land, and Category 2-regulated land mapping in the development footprint area of the project.

Rehabilitation and Mine Closure Strategy

7. Topsoil from pastures may contain weed species

Section 5.10.1.1. of the Rehabilitation and Mine Closure Strategy (Appendix 24 of the EIS) states that topsoil from pasture may be used at Glendell in areas to be planted to recreate native woody vegetation communities. Such soil will need to be managed to ensure that aggressive exotic grasses such as Kikuyu (*Cenchrus clandestinus*, Rhodes Grass (*Chloris gayana*), African Lovegrass (*Eragrostis curvula*), Coolatai Grass (*Hyparrhenia* species), and exotic shrubs such as *Acacia saliga* do not become established. Such exotic species can lead to poor rehabilitation outcomes by outcompeting planted species. BCD acknowledges that the mine rehabilitation plan will be developed post-consent and may be refined with each Mine Operation Plan.

Recommendation 7

BCD recommends that the mine rehabilitation plan includes the management of aggressive exotic species that, if established, would lead to poor rehabilitation outcomes.

8. Planting mixes should include Port Jackson Figs

Section 5.10 discusses the revegetation program for the Mount Owen Complex and how indigenous plants will be used to establish woody vegetation that is consistent with Central Hunter Ironbark – Spotted Gum – Grey Box Forest and Central Hunter Grey Box – Ironbark woodland as well as riparian communities. A stated objective of this rehabilitation is to provide habitat for local threatened species.

Port Jackson Fig (*Ficus rubiginosa*) occurs widely across the Hunter Valley in a range of vegetation communities, but usually in low abundance, where they occur on rock outcrops or as stranglers in Eucalypts. BCD recommends that a small number (for example, 1 in every 500 or 1000 plants) of Port Jackson Figs are included in the planting mix to provide shelter and food resources for threatened fauna, such as grey-headed flying-foxes. These may be planted around rockpiles in the rehabilitation area. BCD acknowledges that details of the planting mix will be developed post approval.

Recommendation 8

BCD recommends Port Jackson Fig (*Ficus rubiginosa*) is included in the planting mix for native woody vegetation in post-mine rehabilitation to provide food and shelter for threatened species.

9. Post-mine rehabilitation completion criteria should be refined

Table A of the Mine Rehabilitation Plan describes preliminary closure criteria, rehabilitation objectives and completion criteria for rehabilitation areas. In relation to the completion criteria and the definition of 'Sustainable Native Vegetation', BCD recommends that the planted vegetation is compared against benchmark values of the target Plant Community Type(s), and that they meet at least 60% of the benchmark values for structure, composition and function elements, to be considered sustainable native vegetation. In addition, sustainable native vegetation should have maximum percent cover values for ecosystem-altering weed species such as *Acacia saligna*, *Olea europaea* subsp. *cuspidata* and *Chloris gayana* values of no more than 5 percent canopy cover. BCD acknowledges that details of the 'Rehabilitation and Mine Closure Strategy' will be refined post approval.

Recommendation 9

BCD recommends a consent condition is included that requires the 'Rehabilitation and Mine Closure Strategy' to be developed in consultation with the Biodiversity and Conservation Division.

Aboriginal cultural heritage

10. Consultation has been undertaken appropriately

The proposed Project Area comprises approximately 2,900 hectares, the majority of which is already cleared or is approved for disturbance as part of existing approvals. A large proportion of the Project Area has been subject to archaeological salvage programs. The archaeological survey area covered approximately 1,010 hectares. All areas included in the current additional disturbance area were included in the survey area and have been assessed.

The Aboriginal Cultural Heritage Assessment Report (ACHAR) documents the consultation process that has been undertaken with 32 registered Aboriginal parties (RAPs) for the Project. The representative bodies for the Project are known as '*Knowledge Holder Groups',* consisting of Wonnarua Nation Aboriginal Corporation (WNAC), Plains Clan of the Wonnarua People (PCWP), The Wanaruah Local Aboriginal Land Council (WLALC) and Community RAPs.

BCD notes that while consultation on the project has been undertaken with PCWP since 2017, PCWP did not contribute a cultural values assessment during the preparation of the ACHAR submitted with the EIS. The extended consultation process (2017-2020) undertaken by the proponent, which included arranging separate cultural values workshops with several RAP groups, providing additional opportunities for consultation, facilitating consultation across a range of settings, and multiple opportunities for RAP involvement, is an example of best practice consultation.

Consultation has been undertaken in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, the Consultation Requirements). The failure of one or more RAPs to provide cultural values information during a consultation process undertaken in accordance the Consultation Requirements does not invalidate the consultation process.

BCD notes that the proponent has provided PCWP with the opportunity to provide cultural values information post submission of the EIS to the Department. Should PCWP fail to provide a cultural values assessment prior to the preparation of the response to submissions report, there should be no further opportunities for a cultural values assessment to be submitted.

Recommendation 10

BCD is satisfied that consultation with the Aboriginal community has been undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010.* BCD notes that consultation with one registered Aboriginal party is ongoing and should conclude prior to the preparation of the response to submissions report.

11. BCD is satisfied with the assessment of significance

The ACHAR includes both the Glendell Continued Operations Project, Dr Shaun Canning, Australian Cultural Heritage Management (ACHM), 17 September 2019, and the Aboriginal Archaeology Impact Assessment Report (AAIA) Ozark, November 2019. BCD is satisfied that that ACHAR adequately identifies and describes the Aboriginal cultural heritage values that exist across the project area, as well as any potential impacts on those values.

Recommendation 11

BCD is satisfied that the significance assessment of the Aboriginal cultural heritage values of the project area have been adequately accessed, as well as any potential impacts on those values.

12. The Aboriginal Cultural Heritage Management Plan should be updated

The ACHAR outlines that there are 69 extant Aboriginal sites in the disturbance footprint, including 39 artefact scatters and 29 isolated finds, which may be impacted by the proposed development. A scarred tree was recorded as part of this assessment, which will not be not be impacted. BCD recommends that salvage of the 69 Aboriginal sites be undertaken in consultation with the RAPs, once the *Mt Owen Open Cut, Aboriginal Cultural Heritage Management Plan, V4 (XMO SD PLN 0060), 29 May 2018,* is revised to include all additional Aboriginal sites and cultural values.

Recommendation 12

BCD recommends that the *Mt Owen Open Cut, Aboriginal Cultural Heritage Management Plan, V4 (XMO SD PLN 0060), 29 May 2018,* is revised to include all additional Aboriginal sites and cultural values.

Flooding and flood risk

13. A monitoring program should be developed for the Lower Bettys Creek diversion

The flood impact assessment (Umwelt November 2019) indicates that the project will result in significant changes to the water level and velocity at Lower Bettys Creek (location 11). This will increase the risk of scour and erosion of this watercourse. Section 12 of the Surface Water Impact Assessment recommends a monitoring program for the York Creek realignment. A similar monitoring program should be implemented for the Bettys Creek diversion to determine if scour protection or mitigation works are required.

Recommendation 13

A stream stability monitoring program should be developed for the Lower Bettys Creek diversion.

14. The proponent should provide Council with flood behaviour data for the Bowmans Creek floodplain

The proponent has made significant changes to the Bowmans Creek catchment that have the potential to affect flood behaviour. As Council is responsible for managing flooding risks in this area in the future and after the project is complete, the proponent should provide the flood information that it has developed to Council.

Recommendation 14

The proponent should provide Council with flood behaviour data from its flood impact assessment. Flood data to be handed over should include the GIS files for the inundation extents and TUFLOW 2dm output files suitable for importing into the WaterRide viewing package.