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Via: Major Projects Portal

**EPA Advice on Amendment Report
Ulan Coal Mine Modification 6 (MP08_0184-Mod-6)**

Dear Jack,

Thank you for the request for advice from Public Authority Consultation (PAE-71527724), requesting the review by the NSW Environment Protection Authority (EPA) of the Amendment Report for the proposed Underground Mining Extension (MP08_0184-Mod-6) at 4505 Ulan Road, Ulan NSW 2850. We note your request for the EPA to facilitate and seek advice from the Net Zero Emissions Modelling team (NZEM) regarding the greenhouse gas impacts of the proposed modification.

The EPA has reviewed the following documents:

- Ulan Coal Modification 6 – Underground Mining Extension - Amendment Report – Umwelt Environmental & Social Consultants - May 2024
- Appendix 3 - Updated Mitigation Measures Table – Umwelt Environmental & Social Consultants - May 2024
- Appendix 5 Amended Groundwater Impact Assessment – Australasian Groundwater & Environmental Consultants – May 2024
- Appendix 6 Amended Surface Water Impact Assessment – Engeny – 5 April 2024
- Appendix 7 - Amended Greenhouse Gas and Energy Assessment – Airen Consulting – 23 April 2024 (reviewed in consultation with NZEM)

The EPA understands the proposal is for:

- An extension of life of mine until 30 August 2035 (an additional 2 years)
- The extraction of an additional 16.3 Mt of product coal
- Extension of Ulan Underground longwall (LW) LWW9 to LWW11 to the west (with a setback from Mona Creek).
- Widening of Ulan Underground LWW11 by approximately 30 metres
- Extension of Ulan West LW10 to LW12 to the north
- Minor changes to surface infrastructure.

The site currently holds Environment Protection Licence (394) under the *Protection of the Environment Operations Act 1997* and understands that this proposal does not seek to increase their annual extraction limit for the site.

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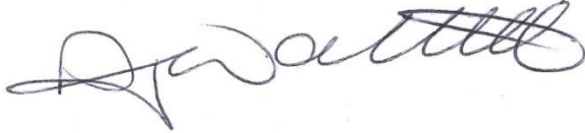
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The EPA has reviewed the amended modification and has provided comments and recommendations detailed in **Attachment 1**. This includes additional information required by the EPA to complete its assessment, as well as conditions to be added to the final consent, if granted. Please note that these recommended conditions will also be included in the EPA's advice during the Response to Submissions stage.

If you have any questions about this request, please contact Gabby Sutherland on 6640 2508 or via email at gabrielle.sutherland@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'D Wallett', with a stylized, cursive script.

DARREN WALLETT
Manager – Environment Protection Planning
NSW Environment Protection Authority

ATTACHMENT A – EPA RESPONSE TO Amendment Report Ulan Coal Mine Modification 6

Further information or clarification required:

1. GREENHOUSE GAS

The EPA has facilitated review of the supporting documents and provides the following detailed comments regarding greenhouse gas emissions.

Greenhouse gas Scope 1, 2 and 3 emission calculations

A review of the Greenhouse Gas (GHG) emissions assessment for the amended Ulan Coal Complex (UCC) Modification 6 Project (MOD 6) shows that relevant emission sources and scopes were considered. The emission estimates align with contemporary practices, and the emission factors used appear adequate for the calculations.

However, the total impact of the project on NSW and Australian emissions remains unclear, as the figures presented only account for the incremental activities associated with MOD 6. This also makes it difficult to evaluate the efficiency of the proposed GHG mitigation actions when considered solely in the context of MOD 6.

Proposed greenhouse gas mitigation measures

GHG mitigation actions related to reducing fuel use for non-road vehicles, onsite stationary plant and electricity consumed by the ventilation system and the coal handling and preparation plant. It is unlikely these measures will substantially reduce the greenhouse gas footprint of the UCC. This is due to fugitive emissions from UCC being relatively small and CO₂-dominated as evidenced by recent National Greenhouse and Energy Reporting Scheme (NGERs) data. Hence little can be done to mitigate those emissions.

Without the context of the full emissions profile for UCC operations that are inclusive of MOD 6, it is not known what the future GHG emissions will look like and how effective the mitigation measures will be.

The following information and/or clarification on greenhouse gas is required:

The Applicant must provide a detailed annualised breakdown of UCC operations inclusive of MOD 6. Specifically:

- This should include supplementary data (i.e., an additional table in the appendix) showing annualised activity and emissions data that covers the totality of UCC's operations (i.e., those under existing approvals plus those related to the additional coal extraction under the amended (MOD 6).
- Show annualised activity and emissions out to 2035 due to fugitives, fuel consumption (mobile and stationary) and electricity consumption for the entire UCC, as well as run-of-mine (ROM) and product coal forecasts.
- The impact of total UCC emissions (including MOD 6) compared against future projections as given by the NSW Government's Net Zero Emissions Dashboard and Australian Government Projections. The total UCC emissions (including MOD 6) should be assessed for year 2030 as an example.
- Activity and emission data in relation to decommissioning or site rehabilitation should also be reported. If these activities are part of the approved operations, that should be stated and emissions for years 2033 to 2035 need to be provided.

We highlight that the full UCC greenhouse footprint is required (not just in the context of MOD 6) to understand the efficacy of the proposed mitigation actions. The EPA advises that the principles and information identified in the [Draft NSW EPA Guide for Large Emitters](#) is to be used in addition to the information raised above in the GHG assessment.

2. SURFACE WATERS

The EPA provides the following comments regarding surface waters.

UCC operations result in water make which exceeds the site's current water demands due to significant groundwater inflows to the Ulan Underground Mine and Ulan West. This will eventually require water treatment using a Water Treatment Facilities (WTF) appropriately licensed to discharge to the environment. The EPA understands that the amended proposal is likely to generate an increase to surface water discharge from LDP006 and LD019, as stated within the Water Balance of the Modification Report (Nov. 2022), largely due to an increase in groundwater inflows. The supporting environmental assessments, indicate that Ulan Coal Mine will not request to vary the current EPA licensed discharge volume limits from LDP006 and/or LDP0019.

The Modification Reports and the Amended Modification Reports referred to an approved 'Talbragar River Discharge' structure and associated pipeline. In addition, Appendix 9 – Statement of Commitments: 6.5.6 of the Project Approval requires that UCC *"will undertake a research study on the Talbragar River commenced at least six-months prior to any discharge into the waterway"*.

The EPA understands that as part of existing condition of consent, a research study will be conducted to establish baseline conditions of the Talbragar River downstream of the discharge point, develop a flow release protocol, and develop a monitoring program to review the effectiveness of the release protocols.

The following information and/or clarification on surfaces waters is required:

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

Matters to be addressed with conditions:

1. HYDROGEOLOGY

The EPA provides the following detailed comments and recommended conditions regarding groundwater.

Predicted impact on groundwater

The predicted long-term drawdown from the model shows the colluvium associated with Mona Creek is expected to see continued lower water levels post mining. The presented model result has identified areas with 5 m drawdown in the alluvium and colluvium under the Mona Creek. Based on uncertainty analysis, the probability of predicted cumulative maximum drawdown exceeding 2 m for alluvium-colluvium sediments is very likely.

There is a long-term risk to groundwater quality due to the potential mixing of water from the coal seam with the shallower alluvial/colluvial aquifers. This risk arises from predicted post-mining groundwater mounding and possible fracturing from mine workings that further connect to the surface near the Mona Creek alluvium. It should be noted that groundwater associated with the Jurassic sediments are more saline than the coal seam waters. Therefore, a potential mitigation or remediation is likely to be required during operation.

Given the inherent groundwater-related impacts associated with the activity and proposed modification, a comprehensive groundwater monitoring and management program is necessary. This program will help monitor and manage potential impacts from the mine on groundwater quantity and quality, ensuring minimal adverse effects on third-party bores and water resources.

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

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

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

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

2. LICENCED DISCHARGE POINTS & SITE WATER MANAGEMENT

The EPA provides the following comments and recommended conditions regarding site water management and the site's licenced discharge points.

The EPA recognises the historical work by UCC to install Reverse Osmosis (RO) systems to treat mine related groundwater prior to discharge, along with the associated and continued water management prior to discharge. However, it is noted that this system has been in place for several years and could benefit from an overall system review. The EPA technical review of the potential groundwater impacts associated with the amended proposal has identified the potential long-term risk to groundwater quality due to the potential mixing of water from the coal seam with the shallower alluvial/colluvial aquifers. It is therefore possible that additional pressures will be placed on the future quality of mine related groundwater requiring treatment prior to discharge.

The EPA recommends that UCC be required to undertake a detailed review of all surface water management systems with regards to mine related groundwater management, blending, treatment and discharge locations to reduce impacts to the environment.

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

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