Planning & Environment
Resources Regulator

Our Ref: DOC19/76073
SF19/5277

Andrew Rode
Senior Environmental Assessment Officer
Resource Assessments
Planning Services
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

By email: andrew.rode@planning.nsw.gov.au.

Tahmoor South Coal Project (SSD 8445): Adequacy of the Environmental Impact Statement (EIS)

Dear Andrew,

I refer to the Department of Planning and Environment – Resources Assessments (DPE – Resources & Assessment) email dated 16 January 2019 inviting the Resources Regulator to provide advice regarding the Environmental Impact Statement (EIS) and recommended conditions for the Tahmoor South Coal Project (SSD8445).

Development Details

The Tahmoor South Coal Project is an underground operation located in the vicinity of Tahmoor and Bargo, approximately 80km south-west of Sydney NSW.

The Tahmoor South Coal Project proposes to:

- extend existing underground mining areas towards the south, and extraction, processing and rail transportation of up to four million tonnes per annum of run-of-mine (ROM) coking and thermal coal;
- upgrade surface infrastructure to facilitate the extension, including expansion of the existing rejects emplacement area (REA), additions to the existing bathhouses and associated access ways, upgrades to the Coal Handling and Preparation Plant (CHPP), construction of two new mine ventilation shafts, and upgrades to offsite service infrastructure;
- continued operation of existing mine facilities until approximately 2035

The Resources Regulator has previously provided the following advice:

- *Advice from (then) DPE Resources and Geoscience – letter from Zane West dated 30 May 2017 (OUT17/20175) – included a request that the "standard mining development rehabilitation SEARs, be applied to this project".*

It is understood that standard mining development rehabilitation SEARs applicable at the time, were those contained in the *Indicative Secretary's Environmental Assessment Requirements (SEARs),* NSW Government (October 2015) prepared as part of the Department's Integrated Mining Policy. These are as follows:

Post-mining land use

(a) Identification and assessment of post-mining land use options;

(b) Identification and justification of the preferred post-mining land use outcome(s), including a discussion of how the final land use(s) are aligned with relevant local and regional strategic land use objectives;

(c) Identification of how the rehabilitation of the project will relate to the rehabilitation strategies of neighbouring mines within the region, with a particular emphasis on the coordination of rehabilitation activities along common boundary areas;

Rehabilitation objectives and domains

(d) Inclusion of a set of project rehabilitation objectives and completion criteria that clearly define the outcomes required to achieve the post-mining land use for each domain. Completion criteria should be specific, measurable, achievable, realistic and time-bound. If necessary, objective criteria may be presented as ranges;

Rehabilitation Methodology

(e) Details regarding the rehabilitation methods for disturbed areas and expected time frames for each stage of the rehabilitation process;

(f) Mine layout and scheduling, including maximising opportunities for progressive final rehabilitation. The final rehabilitation schedule should be mapped against key production milestones (i.e. ROM tonnes) of the mine layout sequence before being translated to indicative timeframes throughout the mine life. The mine plan should maximise opportunities for progressive rehabilitation;

Conceptual Final Landform Design

(g) Inclusion of a drawing at an appropriate scale identifying key attributes of the final landform, including final landform contours and the location of the proposed final land use(s);

Monitoring and Research

(h) Outlining the monitoring programs that will be implemented to assess how rehabilitation is trending towards the nominated land use objectives and completion criteria;

(i) Details of the process for triggering intervention and adaptive management measures to address potential adverse results as well as continuously improve rehabilitation practices;

(j) Outlining any proposed rehabilitation research programs and trials, including their objectives. This should include details of how the outcomes of research are considered as part of the ongoing review and improvement of rehabilitation practices;

Post-closure maintenance

(k) Description of how post-rehabilitation areas will be actively managed and maintained in accordance with the intended land use(s) in order to demonstrate progress towards meeting the rehabilitation objectives and completion criteria in a timely manner;

Barriers or limitations to effective rehabilitation

(l) Identification and description of those aspects of the site or operations that may present barriers or limitations to effective rehabilitation, including:

(i) evaluation of the likely effectiveness of the proposed rehabilitation techniques against the rehabilitation objectives and completion criteria;

(ii) an assessment and life of mine management strategy of the potential for geochemical constraints to rehabilitation (e.g. acid rock drainage, spontaneous combustion etc.), particularly associated with the management of overburden/interburden and reject material;

(iii) the processes that will be implemented throughout the mine life to identify and appropriately manage geochemical risks that may affect the ability to achieve sustainable rehabilitation outcomes;

(iv) a life of mine tailings management strategy, which details measures to be implemented to avoid the exposure of tailings material that may cause environmental risk, as well as promote geotechnical stability of the rehabilitated landform; and

(v) existing and surrounding landforms (showing contours and slopes) and how similar characteristics can be incorporated into the post-mining final landform design. This should include an evaluation of how key geomorphological characteristics evident in stable landforms within the natural landscape can be adapted to the materials and other constraints associated with the site.

(m) Where a void is proposed to remain as part of the final landform, include:

(i) a constraints and opportunities analysis of final void options, including backfilling, to justify that the proposed design is the most feasible and environmentally sustainable option to minimise the sterilisation of land post-mining;

(ii) a preliminary geotechnical assessment to identify the likely long term stability risks associated with the proposed remaining high wall(s) and low wall(s) along with associated measures that will be required to minimise potential risks to public safety; and

(iii) outcomes of the surface and groundwater assessments in relation to the likely final water level in the void. This should include an assessment of the potential for fill and spill along with measures required be implemented to minimise associated impacts to the environment and downstream water users.

(n) Where the mine includes underground workings:

(i) determine (with reference to the groundwater assessment) the likelihood and associated impacts of groundwater accumulating and subsequently discharging (e.g. acid or neutral mine drainage) from the underground workings post cessation of mining; and

(ii) consideration of the likely controls required to either prevent or mitigate against these risks as part of the closure plan for the site.

(o) Consideration of the controls likely to be required to either prevent or mitigate against rehabilitation risks as part of the closure plan for the site;

(p) Where an ecological land use is proposed, demonstrate how the revegetation strategy (e.g. seed mix, habitat features, corridor width etc.) has been developed in consideration of the target vegetation community(s);

(q) Where the intended land use is agriculture, demonstrate that the landscape, vegetation and soil will be returned to a condition capable of supporting this; and

(r) Consider any relevant government policies[1].

However, it is noted that only the following SEARs relating to Rehabilitation (taken from the SEARs document dated 20 June 2018), were applied to this Project and these are less comprehensive than what was requested by the (then) DPE Resources and Geoscience.

Rehabilitation and Final Landform – including:

- an assessment of the likely impacts of the development on existing landforms and topography, including justification of the final landform design of the rejects emplacement area expansion and its long term geotechnical stability;

- a detailed description of the progressive rehabilitation measures that would be implemented for the development;

- a detailed description of the proposed rehabilitation and mine closure strategies for the project, having regard to DRG's requirements (see Attachment 2) and the key principles in Strategic Framework for Mine Closure, and the:
  - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria;
  - decommissioning and management of surface infrastructure;
  - nominated final land uses, having regard to any relevant strategic land use planning or resource management plans or policies; and
  - potential for integrating the rehabilitation strategy with offset strategies proposed for the development; and

- the measures which would be put in place for the long-term protection and management of the site, any biodiversity offset areas following the cessation of mining, and

- measures to avoid the propagation of acid sulphate soils.

Environment and Rehabilitation

The Compliance Operations unit within the Resources Regulator has responsibility for providing strategic advice for environmental issues pertaining to the proposed project in so far as they relate to or affect rehabilitation.

It is noted that Appendix V of the Application is a Conceptual Mine Closure Plan. As stated in the EIS, this Plan is conceptual in nature, with a proposal to prepare a Full Mine Closure Plan 5 years before expected mine closure.

The default rehabilitation outcome at this stage is that "all existing mine related infrastructure and associated aspects will be entirely removed and the affected land returned to as close to pre-mining land use as possible".

Table 1 of the Conceptual Closure Plan, copied below, outlines where each of the SEARs applied to the Project have been addressed:

Table 1 SEARs Applicable to the Conceptual Mine Closure Plan

Rehabilitation and Final Landform – Including:	
an assessment of the likely impacts of the development on existing landforms and topography, including justification of the final landform design of the rejects emplacement area expansion and its long term geotechnical stability;	Sections 10 and 11
a detailed description of the progressive rehabilitation measures that would be implemented for the development;	Sections 9, 10 and 11
a detailed description of the proposed rehabilitation and mine closure strategies for the project, having regard to Resources Regulator's (RR) requirements (see Attachment 2) and the key principles in Strategic Framework for Mine Closure, and the:	Sections 10 and 11
• rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria;	Sections 4, 5, 9, 10, 11 and 12
• decommissioning and management of surface infrastructure;	Section 10.1
• nominated final land uses, having regard to any relevant strategic land use planning or resource management plans or policies; and	Section 7
• potential for integrating the rehabilitation strategy with offset strategies proposed for the development; and	Sections 6.6 and 10.6
the measures which would be put in place for the long-term protection and management of the site, any biodiversity offset areas following the cessation of mining, and	Section 11
measures to avoid the propagation of acid sulphate soils.	Section 11.5

The Resources Regulator advises the Department of Planning and Environment – Resources Assessments that the SEARs for Rehabilitation have not been fully addressed in

the Environmental Impact Statement (EIS) for **Project Tahmoor South**, dated **21 December 2018**.

Additional information is required to demonstrate that sustainable rehabilitation outcomes can be achieved as a result of the project. The required additional information is as follows:

1. The "Final Landform" Plan (Figure 9 of the Conceptual Mine Closure Plan) has no contours and no indication of the Final Landform. The Plan also only covers the Reject Emplacement Area, not Domains 1, 2, 4 and 5 which would also be applicable. A more detailed "Final Landform" Plan, covering all applicable Domains, is required.

2. There is inadequate commitment to Rehabilitation of impacts to watercourses. Section 11.7.1 (Subsidence of Watercourse and Drainage Lines) refers to existing Management Plans regarding "potential impacts to streams resulting from the mining of longwalls" but these are not provided as part of the EIS and there is inadequate information provided to give confidence that remediation will occur to a satisfactory standard.

   At minimum, general commitments and completion criteria regarding remediation of impacts to watercourses and drainage channels should be included in the EIS.

   (Should the project be approved, Development Approval conditions should be applied which set minimum Performance Standards / Remediation commitments to ensure no unacceptable impacts on watercourses and drainage channels occur as a result of the project).

3. In Table 8, "Preliminary Rehabilitation Success Criteria"
   - it is noted there is a 'Slope Gradient' indicator for Domains 1 and 2, but no equivalent for Domains 3, 4, 5 or 6. It is recommended that Phase 2 of this Table be expanded to cover all Domains.
   - For Infrastructure, Domains 1 and 2, the Land Use in the Indicator Column is 'proposed industrial'. This is inconsistent with the default position of returning all lands to native bushland and should be changed.
   - There are no criteria specified for watercourses and drainage channels in terms of ensuring flows are maintained and/or reinstated.

   Table 8 should be updated to address these 3 points.

In summary, the EIS as submitted has insufficient detail regarding rehabilitation commitments and completion criteria in relation to certain aspects of Rehabilitation. Other than the above points, the Rehabilitation related sections of the EIS are considered to be satisfactory.

The Resources Regulator requests that Tahmoor Coal Pty Ltd provide information responding to the comments above.

The Conceptual nature of the Mine Closure Plan is noted and is considered to be acceptable. Further detail regarding rehabilitation can be provided in Mining Operations Plan / Rehabilitation Management Plan documents, which will be required by the Resources

Regulator, and in the more detailed Mine Closure Plan to be developed approximately 5 years before expected mine closure.

It should be noted that this review does not represent the Resources Regulator's endorsement of the proposed rehabilitation methodologies as presented in the EIS. Under the conditions of a mining authority granted under the *Mining Act 1992*, the Resources Regulator, requires an authority 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 the site specific risk assessments conducted by an authority holder. This risk assessment should be used to not only establish a basis for managing risk when planning an activity, but it should also be used and updated (as required) to continuously evaluate risk and the effectiveness of controls used to prevent or minimise impacts. An authority holder may also be directed by the Resources Regulator to implement further measures, where it is considered that a risk assessment and associated controls are unlikely to result in effective rehabilitation outcomes.

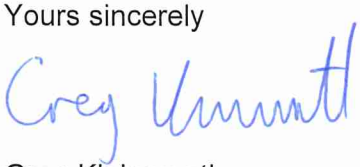
Mine Safety

It is relevant to note that the Resource Regulator Mine Safety Operations is responsible for ensuring mine operators manage the risk to worker health and safety though compliance with the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and the subordinate mining legislation. In particular the effective management of risk associated with the principal hazards as specified in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

The Resource Regulator Mine Safety Operations have not identified any risk that would require comment in relation to this matter.

For enquiries regarding this matter please contact me on (02) 4063 6444 or minres.environment@planning.nsw.gov.au

Yours sincerely



Greg Kininmonth
Manager Environmental Operations (Southern)

On behalf of
Matthew Newton
Director Compliance Operations
Resources Regulator
NSW Department of Planning and Environment

1 March 2019