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By email: Andrew.ode@planning.nsw.gov.au

Hawsons Iron Ore Project (SSD - 5537): Request for Resources Regulator Secretary's Environmental Assessment Requirements

Dear Mr Rode,

I refer to the email dated 30 October 2019 inviting the Resources Regulator to provide Secretary's Environmental Assessment Requirements (SEARs) for the Hawsons Iron Ore Project (SSD - 5537).

Compliance Operations 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.

Mine Safety Operations within the Resources Regulator is responsible for ensuring mine operators manage the risk to worker health and safety through 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*.

Development Details and Assessment

The proposed Hawsons Iron Ore Mine is an open cut operation located approximately 60 kilometres South-West of Broken Hill, NSW. The Hawsons Iron Ore Project proposes to:

The project is to develop a large open cut mine with an average ultimate RoM throughput of approximately 85 mtpa to produce approximately 12 mtpa of magnetite concentrate and includes:

- Large open cut pit
- RoM ore pad and RoM ore processing plant which would include low intensity magnetic separators and associated plant and equipment
- Large waste rock storage facility
- Large tailings storage facility (TSF) to be constructed by beneficially reusing inert overburden
- Mining infrastructure area (MIA).

The project would also require a range of ancillary infrastructure, including:

- Product transport systems
- Electrical and communications infrastructure
- Water infrastructure
- Rail loading facilities
- Road access

Carpentaria Resources Limited have submitted the *Hawsons Iron Project Scoping Report* dated October 2019 for the Department to review.

Compliance Operations Response

Compliance Operations has reviewed the application and recommends that the standard mining development rehabilitation SEARs be applied to this development (see attached).

In addition to the standard SEARs, the Resources Regulator recommends the following non-standard SEARs due to the identification of potential risk(s) as noted in the Development Details and Assessment section above:

- i. The scoping report refers to an additional expansion tailing dams (TSF) on the conceptual site layout however there is no reference of this expansion TSF within the report.
- ii. There is limited information in the scoping report regarding the proposed bore fields in the Lower Renmark Aquifer and issues associated with the highly saline waste water. The SEARs will need to ensure these areas are addressed.

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

Yours sincerely



Christine Fawcett
Manager Environmental Operations
Resources Regulator
NSW Department of Planning, Industry & Environment

22 November 2019

ADVICE RESPONSE

Mining Development Rehabilitation Standard SEARs

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) 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;

(o) 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);

(p) 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

(q) Consider any relevant government policies¹.

¹ The following government policies should be considered when addressing rehabilitation issues:

- Mine Rehabilitation (Leading Practice Sustainable Development Program for the Mining Industry, 2006)
- Mine Closure and Completion (Leading Practice Sustainable Development Program for the Mining Industry, 2006)
- Strategic Framework for Mine Closure (ANZMEC-MCA, 2000)