

Advice to decision maker on coal mining project

Proposed action: Drake Open Cut Coal Mine Project (2010/5457)

Requesting agency	Department of Sustainability, Environment, Water, Population and Communities
Date of request	29 November 2012
Date request accepted	30 November 2012
Summary of request	<p>The Department of Sustainability, Environment, Water, Population and Communities (the department) is currently assessing the proposed project in accordance with the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).</p> <p>The department advises the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (the committee) of an opportunity to comment on a draft and supplementary Environmental Impact Statment. Specifically, the department seeks the advice of the committee on:</p> <ol style="list-style-type: none"> 1. What are the likely impacts of the proposed mine on surface and groundwater resources, in particular, changes to surface and groundwater dynamics and water resources which may support surface habitat? 2. in the context of the above question, based on the information available, does the Committee identify any particular concerns relating to cumulative impacts? <p>The draft Environmental Impact Statement is available for public review. The public exhibition period was between 14 May 2012 and 25 May 2012. The department requested for advice to be provided by 29 November 2012.</p> <p><i>It is suggested that this advice be read in conjunction with the committee's advice on the Sonoma Mine Extension Project.</i></p>
Advice	<p>The Committee provides the following advice based on information available in the draft Environmental Impact Statement and Supplementary Environmental Impact Statement and the proponent's response to submissions:</p> <ol style="list-style-type: none"> 1. The Committee is concerned about potential cumulative impacts on water resources; in light of the number of mining operations in the surrounding area and particularly given the close proximity of this project to the Bowen River. There is inadequate hydrogeological data and no predictive numerical groundwater model or regional water balance for the project site. As a result, it is difficult to draw robust conclusions on the impacts of the proposed mine on surface and groundwater resources or changes to

these dynamics.

2. The Committee considers that the following are required to inform understanding of the impacts of this proposed development on groundwater behaviour and groundwater/surface water interaction:
 - a) Statistically valid data and analysis to characterise the hydraulic properties, hydrochemistry and connectivity of the alluvium and Permian sediments, including consideration of faults and whether the Permian sediments are more appropriately conceptualised as discrete aquifer units;
 - b) Revision of the groundwater conceptualisation to take into account the role of faulting and groundwater/surfacewater interactions in groundwater dynamics;
 - c) The development of a numerical model to simulate groundwater drawdown extent and rates in wet and dry seasons, including changes to groundwater/surfacewater interaction around the Bowen River during the mine operation and postclosure;
 - d) Presentation of a regional water balance that takes into account the predictions of the numerical model;
 - e) The Committee recommends that a thorough risk assessment be undertaken that is informed by the above, and identifies appropriate mitigation strategies including for any likely interaction between the mining operation and the surface water system; and
 - f) A monitoring strategy should be developed to validate the numerical model and provide early indication of water movement from the river towards the mine pit.
3. The Committee has identified that there is a potential for water flow from the river into the pit. The rate of this movement needs to be quantified through the use of an accurate numerical model.
4. The Committee has concerns regarding the implication of flooding given the close proximity of the Co-disposal Facility mine pit to the Bowen River, in light of the fact that the river forms the southern boundary and there is a minimal buffer zone.
5. The Committee provides the following recommendations:
 - a. Further information should be provided to support the assertion that the proposed flood protection thresholds that have been adopted will be sufficient to mitigate downstream water related risks, at both the local and regional scale;
 - b. Any redesigning of the flood mitigation infrastructure during development must identify the direct risk to ecological communities and provide adequate mitigation;
 - c. Additional consideration should be given towards identifying the potential for leachate from the Co-disposal Facility to occur and impact on the water quality of the adjacent Bowen River.
6. There is limited information provided by the proponent on the contribution of the proposed Drake Mine to local and regional water quality impacts, recognising this is already an impacted catchment from various landuses. Water quality concerns would primarily be around discharges of contaminants associated with the mines during flood periods which would need to be dealt with by the Regulator.
7. The Drake Coal project is located within the Bowen River Catchment, downstream of other large coal mines, such as Newlands Coal Mine, and consideration should be given to the potential cumulative impacts on water resources and water dependent ecological communities in this catchment, such as the Birrale Pelican Creek Aggregation.

**Date of
advice**

20 December 2012
