Independent Expert Scientific Committee
on Coal Seam Gas and Large Coal Mining Development

Advice to decision maker on coal mining project

Proposed action: Newlands Coal Extension Project (EPBC 2011/5968)

Requesting agency	Department of Sustainability, Environment, Water, Population and Communities
Date of request	30 November 2012
Date request accepted	5 December 2012
Summary of request	The Department of Sustainability, Environment, Water, Population and Communities (the department) is currently assessing the Newland Coal Extension Project (EPBC 2011/5968) in accordance with the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). 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 the draft environmental impact statement and seeks advice on: 1. Whether the Water Balance Model, Site Water Management Plan and Flood Modelling Report, sufficiently mitigate for adequate protection of riparian areas that may impact on the listed threatened species of concern under the EPBC Act.
Advice	The Committee was appointed following recent amendments to the EPBC Act to provide a collective scientific understanding of water-related impacts of coal seam gas and large coal mining developments. Prior to the appointment of the Statutory Committee, the Interim Independent Expert Scientific Committee on Coal Seam Gas and Coal Mining (the Interim Committee) provided the Australian Government with expert scientific advice on the Newlands Coal Extension Project. The Committee agrees with the advice provided by the Interim Committee, italicised below, and has provided further information to points 1, 2b, 2c, 2d and 3. *1. The committee has concerns over the limited information provided in relation to cumulative impacts, particularly given the scale of the pending development. Further information to identify the cumulative impacts to both surface water and groundwater, is warranted, to enable an assessment of all potential impacts to both water resources and matters of national environmental significance, including an appropriate risk assessment.* ▪ This risk assessment should identify the likelihood of impacts and the potential consequences. This assessment should include the mitigation activities to be

conducted to address these risks.

The Committee agrees with the advice provided by the Interim Committee with respect to the water balance, and has provided additional points to 2b:

2. *In terms of the specific advice requested, the committee notes that the:*

   a) *proponent has provided a site water balance; which predicts a peak water demand in 2030 of approximately 2.4 million litres a day. This water demand will primarily be met by water captured on site, or in the event of a prolonged drought, by SunWater water allocations. The committee advises that following improvements could be made to assist with the interpretation of the model:*

      i. *a summary table which clearly lists all water inputs and outputs; and*

      ii. *discharge quantity and quality triggers, to validate that the proposed dams are adequate as part of the water management strategy.*

   b) *proponent has not provided a regional water balance, as part of their water balance model. Provision of a regional water balance would further assist the full assessment of impacts from the development.*

      - a regional water balance should consider the cumulative impacts of the existing mine and the mine extension, to provide information as to the significance of the project in the regional context. This regional water balance should be provided at a scale appropriate to address the cumulative impacts associated with this project, and should include all neighbouring operations;
      - additional information on the fluxes between groundwater systems and / or interaction with surface water systems is required to determine impacts to riparian ecosystems.

The Committee agrees with the advice provided by the Interim Committee with respect to the Water Management Plan and Flood Modelling Report, and has provided further information to 2c and 2d below:

   c) *Water Management Plan discusses the water balance and water release scenarios for the six proposed discharge points. The plan does not appear to include discharge triggers or information relating to the quality or quantity of discharge/received water. Further documentation may benefit by consideration of a broader range of flow scenarios. In addition, any contaminants that are released are likely to accumulate under low flow scenarios and adverse impacts are likely if discharges occur after a waterway has recently flowed; for example, impacts relating to the first flushing event.*

   d) *Water Management Plan also proposes three monitoring points for the receiving waterways. The number and location of these monitoring points are not considered adequate, as individual discharge points are not monitored. Further documentation may benefit through consideration of monitoring all discharge points at multiple locations.*

      - the water quality monitoring plan should include both upstream and downstream reference sites, and include specific details on the monitoring of salinity, turbidity and other toxicants given the composition of the waste rock;
      - sufficient information should be provided to demonstrate a clear link between proposed monitoring, the distribution of significant ecological communities and potential impacts.

   e) *Flood Modelling Report discusses impacts associated with diversions and flooding. The proposal includes four creek diversions, which will be designed to mimic the*

pre-development channel and hydraulic characteristics. The proponent has proposed rock armouring as a mitigation measure to increase the scour threshold and reduce the risk of erosion. In addition, a monitoring program will be established with initial monitoring taken at six monthly intervals. This is considered adequate if monitoring is undertaken at multiple locations downstream and in close proximity to every diversion proposed.

f) Flood modelling has been undertaken on the 2 yr, 10 yr, 50 yr, 100 yr, and 1000 yr Average Recurrence Interval (ARI) and probable maximum flood (PMF) development scenarios. The majority of results indicate a minor impact on flood levels and velocities, where pits and infrastructure are located outside of the 1000 yr ARI. This is considered adequate to reduce potential impacts to matters of national environmental significance.

The Committee agrees with the advice provided by the Interim Committee with respect to the subsidence, and has provided additional information to point 3, below:

3. *In addition, the committee notes that subsidence has the potential to structurally affect the Cerito Creek Dam structure. The dam wall is within the immediate vicinity of the longwall panels, which may be impacted by cracks in the shallower longwall areas. This will depend on a range of factors including panel width, depth of cover, extraction thickness, overburden lithology and type of the surficial deposits. An assessment of the scale and extent of this potential impact does not appear to have been provided.*

   - further options should be required to mitigate against potential subsidence induced impacts on the structure of the Cerito Creek Dam;
   - the assumption that wet clays present in the overburden will swell to stop leakage, requires validation.

The Committee has provided the following additional information:

- The Committee considers that backfilling of mining voids is environmental best practice;
- The Newlands Coal Extension project is located within the Bowen Broken River Catchment, upstream from the proposed Drake Coal Mine, and consideration should be given to the potential cumulative impacts on water resources and water dependent ecological communities in this catchment.

Date of advice	20 December 2012