

METROPOLITAN COAL MINE LONGWALLS 301-303 EXTRACTION PLAN Record of Decision

In granting a conditional approval of Metropolitan Coal's Extraction Plan application, I have carefully considered the following:

1. PROJECT APPROVAL STATUS

- The Metropolitan Coal Mine was approved by the Minister for Planning in June 2009 and has since been modified on three occasions.
- The existing project approval allows extraction of up to 3.2 million tonnes of coal per year for 23 years using longwall mining methods.
- The project approval requires an Extraction Plan to be approved by the Secretary before mining in specific longwalls commences.
- Mining is undertaken in two distinct areas; the southern and northern mining domains. Mining is now completed in the southern domain (Longwalls 20 to 27).
- Metropolitan Coal has submitted an Extraction Plan application for the Longwalls 301 to 303 in the northern domain.

2. CONSULTATION WITH AGENCIES & COMMUNITY

- On 17 November 2016, Metropolitan Coal held a preliminary workshop with WaterNSW about the Extraction Plan.
- On 9 December 2016, the Department then held a full interagency meeting to discuss the Extraction Plan.
- The Extraction Plan was subsequently sent to WaterNSW, the Dams Safety Committee (DSC), the Division of Resources and Energy (DRE), the Office of Environment and Heritage (OEH) and the Department of Primary Industries – Water (DPI Water), as well as targeted community members, for comment.
- On 22 December 2016, the Department arranged a full interagency site inspection and also attended a further site inspection with DRE on 23 February 2017.
- The Department received 6 submissions, which were forwarded to Metropolitan Coal for a response.
- On 2 March 2017, Metropolitan Coal provided a formal Response to Submissions.
- On 13 March 2017, the Department requested further information about a number of residual issues, which Metropolitan Coal provided on 21 March 2017.
- On 1 and 5 May 2017, the Department received further comments and recommendations from Dr Peter Turner (on behalf of the National Parks Association) and Dr Ann Young, respectively.

3. SOCIO-ECONOMIC IMPACTS

- The Department estimates that the remaining coal in the northern domain at the mine would provide about \$165 million in State Government revenue through royalties over the next 15 years.
- Metropolitan Coal produces metallurgical coking coal, which is railed to Port Kembla Coal Terminal (employing 120 persons) for shipping to domestic and overseas customers.
- The company provides 245 direct jobs at the mine and is a significant contributor to regional employment.
- Metropolitan Coal has advised that approval of this Extraction Plan is required in early May 2017, in order to avoid discontinuity in mining.
- The potential stand-down of employees at the mine would have significant socio-economic consequences for the Illawarra region and the State of NSW.

4. BUILT FEATURES

- Roads, Power Lines and Telecommunications Infrastructure:
 - The key features include the M1 Princes Motorway, Princes Highway, Illawarra Railway, high voltage transmission lines and telecommunication infrastructure.
 - The Subsidence Report in the Extraction Plan states that the potential subsidence impacts to these built features include cracking of road surfaces, opening of joints in pipelines, alteration of tension of electricity transmission lines, and cracks in masonry.
 - The Department and DRE are satisfied that these features would remain "*safe, serviceable and repairable*" as required by the performance measures in the project approval.
- Garrawarra Centre (an aged care facility owned by NSW Health)
 - The Garrawarra Centre is more than 60 years old and has many dilapidated buildings containing asbestos. Metropolitan Coal shortened Longwalls 302 and 303 to ensure that all of these buildings would be located outside the 20 millimetre (mm) subsidence contour.
 - There are six intact cottages (containing asbestos) leased to private tenants that are located within the 20 mm subsidence contour and are predicted to experience very minor cracking (i.e. <1 mm). However, any potential cracking is unlikely to occur until the mining of Longwall 302 commences.
 - The Department is satisfied that the Garrawarra Centre would remain "*safe, serviceable and repairable*" and there would be "*negligible damage*" to items of historical or heritage significance, as required by the performance measures in the project approval.
 - The Department notes that NSW Health has an active program to manage public safety risks related to asbestos exposure at the Garrawarra Centre, and Metropolitan Coal has adopted monitoring and management measures that align with this program.
 - Furthermore, issues of public safety from mining operations are regulated under Workplace Health and Safety legislation, and Metropolitan Coal would be required to manage safety issues at the Garrawarra Centre to the satisfaction of the NSW Resources Regulator.
 - The NSW Resources Regulator has confirmed that it is satisfied the Extraction Plan can be approved, subject to conditions requiring regular reviews of subsidence hazards and risks, and the implementation of contingency measures.
 - While the risk of mining-related impacts is extremely low, the Department has adopted these conditions, which require the Built Features Management Plan to be updated in consultation with NSW Health and the NSW Resources Regulator, prior to mining of Longwall 302.

5. ENVIRONMENTAL FEATURES

- Eastern Tributary:
 - The Department notes that impacts on the Eastern Tributary have been reported from previous mining in the southern domain (Longwalls 20 to 27). The Department's Compliance Branch is currently investigating a potential breach of the performance criteria in the project approval.
 - However, Longwalls 301 to 303 are not located directly beneath the Eastern Tributary like the southern longwalls, and the maximum predicted subsidence impacts are considerably less.
 - The predicted subsidence impacts on Eastern Tributary from Longwalls 301 and 302 are extremely low. The subsidence predictions are slightly higher for Longwall 303, including vertical subsidence of up to 50 mm, upsidence of up to 125 mm and closure of up to 150 mm.
 - Notwithstanding, the Department considers that the potential impacts to Eastern Tributary are likely to be consistent with those that were assessed and approved for the original project, and therefore would not cause a breach of the performance criteria in the project approval.
- Woronora Reservoir:
 - The dam is not predicted to experience any measurable vertical subsidence, and only very minor tilts, strains, upsidence or valley closure.
 - DSC has no concerns about the safety of the dam, however raised some concern about potential connections to the underground mine workings, particularly in relation to Longwall 303.
 - WaterNSW also raised some concern about potential loss of catchment yield via connections to the mine workings, particularly as mining moves closer to the dam. The performance measures in the project approval require that there is no more than a "*negligible reduction to the quality or quantity of water resources reaching the Woronora Reservoir*".
 - While there is no evidence of any such loss of catchment yield from previous mining, the Department's Compliance Branch is also considering this in its Eastern Tributary investigation.
 - The Department agrees with DSC and WaterNSW that further investigations about potential impacts to the reservoir and its catchment should be undertaken. These investigations are included in the conditions of this approval.

- Swamps:
 - There are six upland swamps located above Longwalls 301-303, however they are not listed in the project approval and no specific performance criteria apply to them.
 - Consequently, the Department is satisfied that the predicted impacts to these swamps are consistent with those that were assessed and approved for the original project.
 - The three upland swamps that are listed in the project approval with specific performance criteria would not experience any subsidence impacts as they are located 1.6 km from the longwalls.

6. MINE LAYOUT

- The Department acknowledges that the mine has generally been designed to limit impacts on natural and built features at the surface, including relatively narrow longwall panel widths of 163 metres (m).
- In comparison, other similar underground coal mines in the region extract much wider longwalls, including Dendrobium (longwall panel widths of 300 m) and Bulli Seam Operations (310 m).
- Nevertheless, the Department considers that there is a degree of uncertainty about the potential impacts of Longwall 303, particularly on Woronora Reservoir and Eastern Tributary.
- Consequently, this Extraction Plan approval reflects a precautionary approach and only allows mining to take place in Longwalls 301 and 302, subject to strict conditions.
- Further approval will be required before any mining can occur in Longwall 303.
- Any future Extraction Plan applications must incorporate the knowledge and understanding gained from monitoring the impacts of mining in Longwalls 301 and 302.

7. CONDITIONS ON LONGWALLS 301 AND 302

The Department has imposed a range of strict conditions on the Extraction Plan approval for Longwalls 301 and 302, which are provided below.

1. Additional groundwater monitoring (both shallow and deep), including:
 - Commencement of the installation of a multi-level piezometer over the centre line of Longwall 302, in consultation with WaterNSW, within eight weeks of this approval.
 - Replacement of the multi-level piezometer over the centre line of Longwall 302 post-extraction, if necessary, at least to the depth of full desaturation, in consultation with WaterNSW.
 - Commencement of the installation of a replacement multi-level piezometer for the malfunctioning 9EGW2A and two screened shallow monitoring holes (to the depth of the base of the adjacent reservoir valley) on the western side of Woronora Reservoir, in consultation with WaterNSW, prior to the extraction of Longwall 302.
2. Further investigation into potential impacts on Woronora Reservoir:
 - Engagement of independent experts to prepare a Woronora Reservoir Impact Strategy, which provides a staged plan of action for further investigations and a report into the impacts of mining near the reservoir including:
 - detailed consideration of mining-induced diversion of surface waters into underlying aquifers, potential reservoir leakage rates and potential hydraulic connectivity between the reservoir and the mine workings;
 - analysis and characterisation of fracture patterns (both pre-mining and post-mining), including the presence and permeability of induced shear planes;
 - recommendations for additional subsidence monitoring, such as bathymetric surveys or remote sensing techniques; and
 - preparation of a report outlining the findings of the investigations to inform the assessment of future mining beneath or near the reservoir;
 within four months of this approval, to the satisfaction of the Secretary.
 - Commencement of the implementation of the Woronora Reservoir Impact Strategy, in consultation with WaterNSW and DSC, prior to the extraction of Longwall 302.
3. Improved monitoring of Garrawarra Centre:
 - Review and update the Built Features Management Plan, in consultation with NSW Resources Regulator and NSW Health, to include:
 - a mechanism for regular reviews and revisions of the subsidence monitoring program at the Garrawarra Centre; and
 - implementation of contingency measures;
 within three months of this approval, unless otherwise agreed by the Secretary, to the satisfaction of the Secretary.

4. Revised Trigger Action Response Plans (TARPs):

- Review and update the TARPs for any built features that may be affected by Longwall 301, in consultation with the NSW Resources Regulator, within two months of this approval, to the satisfaction of the Secretary.
- Review and update all TARPs to include:
 - a greater focus on early recognition of mining impacts and proactive measures to reduce further impacts or exceedances; and
 - further details on the evidence used to support statements of compliance with performance measures and indicators, including the analysis methodology, sample sizes, significance levels, baseline differences, error types and other variables; prior to the extraction of Longwall 302, to the satisfaction of the Secretary.

DKitto 11/5/17

David Kitto

Executive Director

Resource Assessments and Business Systems

as nominee of the Secretary