



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

## SUBMISSION: METROPOLITAN COAL EXCAVATION PLANS FOR LONGWALLS 305-307

Attn: Paul Freeman

Team Leader

Resource Assessments

Department of Planning Industry and Environment, Planning and Assessment Division

GPO Box 39 Sydney NSW 2001

**Date:** 22 January 2020

### Introduction

Sutherland Shire Environment Centre considers the application by Metropolitan Coal to proceed to excavate longwalls 305-307 to be of crucial importance for the security of the water supply from Woronora Dam. Metropolitan Coal's plan to mine directly under a major city water supply reservoir is a highly contentious issue that has considerable community opposition. Sutherland Shire Environment Centre is currently preparing to submit a petition of 10,000 signatures to the NSW Legislative Assembly.

The current impact of the bushfire crisis gripping the State adds to the importance of protecting our water supply. The Lake Burragorang catchment area has been heavily impacted by fire. Water quality in Sydney's largest water reservoir may have already been impaired by ash and once heavy rains set in runoff of detritus will add further pressure on Sydney Water's filtration systems. As such, it is critical to protect other water reservoirs that may have to be relied on more heavily. In this regard Woronora Reservoir has special value in that it is not directly linked to the other dams in the catchment. Indeed some 20 years ago it was the only Reservoir in the Sydney region not afflicted by the 1998 cryptosporidium outbreak.

The risk of serious damage to Woronora Reservoir from these three longwalls must be avoided.

SSEC does not have access to the actual Extraction Plan but has examined the history of this project with a focus on the issues identified in the conditions of Approval for each Longwall – especially those relating to the latest Longwall Approvals (301-304) that are incrementally moving closer to Woronora Reservoir.

Based on our analysis of publicly available documents, SSEC contends that:

***DPIE must reject the proposed excavation plans for LWs 305-307, if it is to remain consistent with the approval conditions applied to Longwalls 301-304 and the history of approval conditions and adverse impacts extending back to 2009.***

We ask that DPIE (P&A Division) accept this submission and consider the arguments and questions we have provided in their assessment of the LW305-307 Excavation Application.

**For and on Behalf of Sutherland Shire Environment Centre**

Dr Tassia Kolesnikow: (Chair), Dr Catherine Reynolds (Executive Officer)

**Contact for this Submission:**

Dr Greg Walker. SSEC, Email: [gwalker199@gmail.com](mailto:gwalker199@gmail.com). Mob 0409326595



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

## METROPOLITAN COAL EXCAVATION PLANS FOR LONGWALLS 305-307

### Arguments in support of SSEC Position

DPIE P&A has acknowledged that the 2009 approval for this project focused on “... *limiting subsidence ... particularly on the Woronora Reservoir, the Waratah Rivulet and the Eastern tributary*”. (Metropolitan LW304 Extraction Plan Approval 16 June 2019) and that this focus for DPIE remains current as it assesses Extraction Plans (EP) for Stage 3 LWs “*The Department considers that it is important to ensure that there are no further impacts on Eastern Tributary*” (LW303 Reasons for Approval 8/11/18)

DPIE further states that “*It is generally acknowledged and accepted by Metropolitan Coal, P&A, the relevant agencies and the Panel that impacts beyond those predicted have been experienced along Eastern Tributary*”. (Metropolitan LW304 EP Approval 16/06/2019). The predicted impacts referred to are also defined by metrics that exceed the original 2009 project approval condition of ‘negligible’ (implied 0% impact as pointed out by the IEPMC) and that the impacts on Eastern Tributary date back to Stage 2 of the project (LW20-27) and that similar impacts on the Waratah Rivulet occurred in Stages 1 & 2 of the project (See Metropolitan Coal LW304 Water Management Plan, Dec 2019 and Metropolitan Coal Annual Review 2018, 31 Dec 2018).

The recent approvals for Stage 3 Excavation Plans (LW301-302, LW303, LW304), reveal an increased level of concern regarding the ongoing impacts on the Eastern Tributary. In response the approval criteria have been progressively tightened. Extensive setbacks from the Eastern Tributary have been imposed, (e.g. “... *Longwall 303 should be set back from the Eastern Tributary (i.e. at least 450 metres from Pool ETAU.*” (LW303 Reasons for Approval 8/11/18). A ramping up of TARP conditions, requiring more stringent monitoring with tighter metrics to occur well before the setbacks are reached on LW303-304, have been imposed. This has been in order to predict the ‘onset’ of valley closure, rather than wait to see if they meet a predicted / observed measure of the predicted impact.

Under this adaptive management approach, mining was required to cease before full completion of LW303 and the final panel length was “... *some 500 m shorter than proposed in original LW 301 to LW 303 Extraction Plan*” (IEPMC Report Pt2 p75).

For the first time the Approval Documents include reference to consideration of a **cessation of mining**.

In its LW304 Reasons for Approval document of 27/7/19, P&A included the recommendation by WaterNSW that: “... *cessation of mining should be seriously considered at TARP Level 2 if this is reached before the proposed completion of cut through, and the Department, in consultation with company and agencies, should be explicitly given the authority to order cessation of mining if significant valley closure and rock-bar cracking is observed*”.

The Department subsequently approved LW304 conditional on implementation of the proposed TARP (Table 25) with its stringent closure metrics and higher frequency monitoring to commence at an early point of extraction.



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

The IEPMC, while stating that the WaterNSW recommendation on **provision for cessation of mining** based on the proposed TARP "... was worthy of consideration", still questioned the logic of reliance on the more stringent TARP condition and setbacks applied for LW304, "... when these metrics are **already moving** due to Longwall 303; and noting that **no significant reversal or cessation of movement** has occurred in relation to Eastern Tributary Valley Closure and Longwall 303". (IEPMC 27/06/2019). Support for the IEPMC claim comes from the WaterNSW observation that the rock bar at pool ETAU was observed to have cracking as far back as June 2017! (Submission to IEPMC March 2018 Bold font added).

Further, the Panel had previously commented with respect to the "... principal mining-induced effect ..." of valley closure that: "Valley closure at a point develops **incrementally** as additional longwall panels are extracted before finally reaching a **maximum** plateau value. For the case of the Eastern Tributary, it appears reasonable to accept that for practical purposes, maximum closure is achieved at a point by the time a **further four adjacent longwall panels** have been extracted". (IEPMC Advice LW303 6/11/18 – Bold font added)

In summary, impacts are ongoing, occur in an incremental manner across longwalls and the final cumulative impact may take several years to be identified.

**Therefore, given Metropolitan is extracting at a rate of at least one LW a year, the incremental approval with adaptive management approach, adopted for LW303 and LW304, will prove extremely difficult to apply for LW305-307 as each successive LW will be impacted to an unknown extent by effects from previous adjacent longwalls extending back to 301 and 304**

It is understandable therefore that recent Stage 3 longwall approval conditions have imposed ever more restrictive conditions on longwall extraction plans. These have included: not only from exclusion from mining directly under, but also from within approximately 400 - 500m of the tributary and that stringent monitoring, linked to a new sensitive TARP metrics, must occur well before the setback is reached.

However, this logic does not seem to flow on to discussion of potential impacts on the Woronora Reservoir!

## **A Disconnect?**

The Extraction Plan for LW305-307 is not currently available for public consideration (as advised by P&A, this is due to it being a draft only). Therefore, it is not possible to comment directly on proposed dimensions for LW305-307, other than to rely on the latest publicly available document that includes extraction maps (VIZ: LW304 EP).

But there seems to be a **growing disconnect** between the statements relating to prevent further impacts on Eastern Tributary, in recent Stage 3 Longwall Extraction Plan approval documents (VIZ: LW301-302, 303 & 304) and those relating to potential impacts on Woronora Reservoir.

The LW301-302 Approval expressed concern about potential impacts on Woronora Reservoir and hence required that independent experts be engaged to prepare a Woronora Reservoir Impact Strategy. The Approval for LW303, stated that the DPIE recommendation for increased setback (450m) to protect Eastern Tributary, would also further protect the reservoir.

And yet the Approval document for LW304 also states that: although "**Longwall 304 is located [only] 242 metres** from the Woronora's Full Supply Level. The floor of the water storage is not predicted to experience



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

*any measurable vertical subsidence and only very minor tilts, strains, upsidence or closure” (DPIE 16/07/19. Bold font added).*

This is does not conform with the IEPMC major report into mining in the catchment that predicted “... around 1.1 to 1.2 m of vertical surface subsidence and a total mine water inflow of about 0.5 ML/day that does not respond to rainfall” for Metropolitan. (IEPMC 2018)

## Question

***How is it possible that the LW ends are required to be set back some 400 metres from one priority focus (Eastern Tributary) but approval is given for LW304 that will be only 242 metres from another priority focus (Woronora Reservoir)?***

***Further, would not the impact of a LW flank present a greater impact threat that a LW end?***

***How can the Adaptive Management approach used for LWs 303 & 304 be applied to LWs 305-307 when these longwalls will flank and pass under their water bodies in question (Woronora Reservoir) as opposed to LWs 303 & 304 that could simply be required to end before their relevant water body (Eastern Tributary)?***

The IEPMC (LW303 Advice 6/11/18) asked the same question in the context of LW 302-303 ends and the LW27 flank. The Panel also notes in the same advice, that: “... there is the potential for future longwall panels to also impact ETAS to ETAU (and possibly ponds further upstream that have already been impacted). An additional option going forward is to reduce panel width.”

But then point out that: “The proponent has applied to increase the width of Longwall 304, which will at the same time reduce the width of the interpanel pillar between Longwall 303 and Longwall 304. Both actions are conducive to increasing valley closure.”

## Questions

***Narrower LW widths have always been promoted by MC as a means of reducing the risk of adverse impacts under the Woronora Reservoir. Is this to still proposed by Metropolitan?***

***If the setbacks from the important water body (Eastern Tributary) imposed for LWs 303 & 304 were to be imposed for LWs 305 & 306 & 307 for the Woronora Reservoir, would not almost the entire three longwalls be excluded?***

***If the TARP relied upon for LWs303 & 304 were to be applied to LWs 305-307 and linked to the Woronora Reservoir as well as the Eastern Tributary, would not almost the entire three longwalls be excluded on Metropolitan’s own predicted subsidence level?***

***And when would the high frequency monitoring be applied?***

Maybe Metropolitan’s own LW304 Extraction Plan 2019 gives a guide to answers to some of these questions in Figures 1 and 2. The wider interpanel pillars extend along the entire length for the LW305/306 pillar and for all but a fraction of the upper Northern end of the LW306/307 pillar.





# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

Even more revealing is the 35° Angle of Draw and/ a Predicted 20mm Subsidence Contour shown in yellow. The western side of this contour for LW304 not only flanks, but passes under part of the Reservoir, and its southern end passes under the Reservoir! The TARP for LW304 is based on a valley closure of only +/- 2mm!

If this same contour were to be successively drawn over LW305 & 306 & 307, it would cover almost the entire three proposed longwalls.

## **Woronora Reservoir Impact Strategy**

DPIE's P&A had received the Woronora Reservoir Impact Strategy Reports Stage 1 & Stage 2. The Stage 1 report appears to have been focused on monitoring and investigation issues. But Stage 2 was still under assessment at the time of the sign off for approval for LW304 to commence.

## **Question**

***How was it appropriate to approve LW304 extraction when a required special report was yet to be assessed by all parties?***

Unfortunately, the Woronora Reservoir Impact Strategy Stage 2 Report does not seem to be publicly available nor does there appear to be any confirmation in the Approval document that LW304 had received endorsement by the Woronora Reservoir Impact Strategy Expert Panel (WRISEP).

## **Swamps**

The original 2009 approval placed conditions on only three swamps (76, 77 & 92). The approval decisions for LW301-303 mention that there is no threat from subsidence to these swamps as they are '1.6 km from the longwalls.' However, they do note that there are 'six upland swamps' above these longwalls. But consideration of potential adverse impacts on these six swamps were dismissed on the basis that they were not included in the original conditions and so had no specific performance criteria. However, WaterNSW state that "*Metropolitan (Swamps 20 and 28) have exceeded the expected levels of impact.*" (Submission to IEPMC March 2018). And the IEPMC themselves concluded that mining under swamps "... can result in significant changes to swamp hydrology and redirection of surface runoff, which the Panel considers are very likely irreversible. (IEPMC Pt2 Oct 2019)

## **Questions**

***Given the acknowledged importance of swamps to catchment health, is it not reckless to exclude them from approval consideration strictly on their inclusion or exclusion in the original approval conditions?***

***Has it not been acknowledged that there have been significant changes in the understanding of impacts over the past decade?***

***Further if original conditions are to be awarded such importance in decisions on swamps, should not swamps be considered in relation to the original condition on Catchment Yield that required: "Negligible reduction in the quality or quantity of water resources reaching the Woronora Reservoir"***

Swamps play a vital role in delivering on both quality and quantity of water resources. A role that is even more important in the current drought and bushfire crisis.

## **Connected Fracture Regime**



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

Continuing the focus on original conditions, comment has been made previously that these conditions applied the term 'negligible' on several conditions relating to surface water impacts (VIZ: '*Negligible leakage from Woronora Reservoir*'. '*Negligible reduction in the water quality of Woronora Reservoir*').

One original condition however, that was not referenced in 'negligible' terms, was: '*No connective cracking between the surface and the mine.*' The IEPMC commented that the average daily water flow into the Metropolitan mine '*... displays no evidence of a connected fracture regime ...*' (Report Part 1 2019)

However, DPIE needs to be cognisant of the fact that **lack of evidence does not mean no existence nor guarantee no future existence** if mining is allowed under and near the reservoir.

For the agency with direct responsibility for the catchment management, technical definitions linked to approval documents must be quite frustrating when for WaterNSW: "*It is now clear that subsidence effects over both of the operating mines in the Special Areas are causing impacts on groundwater levels and surface water flows, which is a risk to the quantity of water available in the Special Areas.*" (Submission to IEPMC March 2018).

## Remediation

### Question

***Is DPIE confident that the damage to Waratah Rivulet and Eastern Tributary can be remediated as required under the 2009 Approval conditions?***

***If not and the damage is permanent, why is the project allowed to continue?***

***Have any options for remediation of possible Woronora Reservoir damage been identified?***

Rehabilitation / remediation plans were required conditions of the Metropolitan Project approval in 2009. There appears to be no reference to any remediation outcomes in the Approval documents for Stage 3 Longwalls. Latest versions of impacts on Waratah Rivulet and Eastern Tributary that require remediation are found in Metropolitan Coal LW304 Water Management Plan (Dec 2019) and Metropolitan Coal 2018 Annual Review (31/12/2018).

These documents identify 9 pools in Waratah Rivulet and 12 pools in the Eastern Tributary that exceed the subsidence impact performance measure and thus require remediation. Of these 21 pools, only 3 on the Waratah Rivulet pools have had remediation work completed. Although Metropolitan state they believe the remediation work has been successful, the outcome is yet to be confirmed in accordance with the required stream remediation performance indicators.

Remediation work on 3 impacted pools of the Eastern Tributary is proposed but awaiting approval of the remediation plan that was submitted to DPIE in Nov 2018.

No mention of remediation options for possible damage to Woronora Reservoir have been identified.

However, most importantly, the IEPMC recommended that: "*Remediation should not be relied upon for features, including watercourses and swamps, that are highly significant or of special significance.*" (IEPMC Report Pt2 2019)

### Summary



# Sutherland Shire Environment Centre

PO Box 589 Sutherland NSW 1499 | office@ssec.org.au  
www.ssec.org.au | ABN: 96 127 431 611

The matters raised in this submission are considered consistent with the findings of the IEPMC in its Part 2 Report of October 2019. It is assumed that P&A is well versed in the details of this report. In the context of this submission the issues of concern to the Panel included: potential water losses, knowledge limitations, deficiencies in impact prediction, likely irreversible damage, site specific impact variations, limited remediation options and cumulative impacts that could require attention in perpetuity!

DPIE is thus well informed (by the IEPMC and other experts) of the risks associated with the current Metropolitan EP for LW305-307.

## **Conclusion: Woronora Reservoir**

***If the same conditions, imposed on LW303 and 304, to prevent predicted impacts on Eastern Tributary, are to LW305-307, then LW305-307 must be excluded from passing, not only directly under the Woronora Reservoir, as proposed, but also must be setback a similar distance from the Reservoir to the setbacks required from Eastern Tributary.***

***Surely, it is not possible for acknowledged impacts on Eastern Tributary (and Waratah Rivulet), to be assumed to not also happen for Woronora Reservoir?***