



## THE COLONG FOUNDATION FOR WILDERNESS LTD.

Thursday March 30<sup>th</sup>, 2017

Ms Abigail Golderg  
Chair  
Planning Assessment Commission  
Level 3, 201 Elizabeth St  
SYDNEY NSW 2000

Dear Commissioner Goldberg,

### **PAC determination of Springvale Mine Extension Mod 1**

The NSW Planning Assessment Commission should limit environmental damage being caused by the Springvale mine extension through variation of the mine's consent. While Centennial Coal has applied for a mine variation to increase production by a million tonnes per year, the consequent increased rate of environmental damage should be reduced by variation of the mining plan.

The public interest will be best served when this consent modification process fixes an error identified in the consent so as to improve environmental outcomes. It is not possible for third parties to lodge development applications so this consent modification process is an appropriate avenue for community groups to seek correction of errors in the consent to protect the environment.

In June 2016 the independent experts swamp monitoring committee reported significant impacts have occurred to Carne West Swamp in the extension area that was approved in the September 2015. This independent expert establishes that Centennial Coal's previous assessment of negligible impacts from longwall mining on national heritage listed swamps is wrong.

The expectation of negligible impacts to national heritage listed swamps, as expressed in the September 2015 consent and the 2014 EIS are now known to be significant underestimates of the on-going damage due to far field impacts that have been identified by the independent expert panel.

According to the offset policy for swamps, the current environmental offset process is only to be used as a last resort. It is not an alternative to swamp protection. The consent should be varied under this modification to protect these nationally threatened swamps from being undermined.

The independent expert monitoring committee also advised in June 2016 that a waterfall below Carne West Swamp had stopped flowing due to longwall mining. The loss of flows over Carne West waterfall on Newnes Plateau is inexcusable as specific consideration of waterfall impacts were omitted from the 2014 EIS. To rectify the omission of environmental assessment of waterfalls affected by mining in extension area, the flows from swamps for these significant landscape features must be protected by modification of the development consent.

### **Information in the 2014 EIS on swamps was known to be incorrect and misleading**

In the 2014 Environmental Impact Statement for SSD 5594 (the mine extension) consultants remarked that Junction Swamp was not damaged by previous longwall mining. The Environmental Impact Statement for the Springvale Mine Extension Project, April 2014, Appendix E, on page 75 when referring to West Wolgan, Narrow, East Wolgan, Sunnyside and Junction Swamps states:

“The results of the 2012 study showed that no water level impacts that could be attributed to past or present mining operations (subsidence-related impact or depressurisation) were observed. Rather, the water levels in the swamps showed a strong correlation to cumulative rainfall trends, and this was found to be the driving factor.”

And again, Environmental Impact Statement for the Springvale Mine Extension Project, April 2014, the Appendix B to Appendix E, page 11 states in relation to Junction Swamp:

“No water level changes that can be attributed to longwall mining have been observed.”

Other examples include:

“Analysis ... indicates that there is negligible to minimal impact on THPSS [Temperate Highland Peat Swamps on Sandstone] ecosystems on the Newnes Plateau due to depressurisation of the Illawarra Coal Measures.” (Centennial Coal EIS, 2014, pg. 308)

“The depressurisation of aquifers in strata overlying the coal seam has been shown to have minimal impact on the swamps on the Newnes Plateau and the surface drainage network of the water supply catchments” (Centennial Coal EIS, 2014, pg. 324)

... “it is accurate to say that mining at Springvale has not led to any identifiable water level impacts on the monitored swamps” (Centennial Coal EIS, 2014, Appendix E pg. 34).

### **Earlier contradictory evidence by Centennial Coal’s consultants regarding Junction Swamp**

Prior monitoring references to Junction Swamp damage by Centennial Coal consultants explained that Junction Swamp was undermined in 2003-2004 and damaged by longwall mining.

Junction Swamp was described as a small swamp fed by a perched water table (Centennial Angus Place, 2005). Its sphagnum moss, coral fern, sedge and rush species were reported as healthy in 2001. These species had declined by 2006 (Springvale Coal, Nov. 2006, Attachment 5, table 4). Emergent eucalypt saplings were reported in March 2007 (Springvale Coal, Attachment 4, section 3.4), and the swamp’s stands of *Leptospermum* were dead or in a poor condition.

Connell Wagner (2005) for Centennial coal reported that discharge from a V-notch weir had declined to zero as longwall mining approached the second half of Junction Swamp in March 2004, and was associated with a fall in the groundwater level.

“The conclusion suggested by the data is that the extraction of Longwall 409 has impacted on the groundwater regime beneath the swamp” (Connell Wagner, 2005, page 14).

**Current swamp impacts assessment reported in extraction plan 419 should inform the modified conditions and not the incorrect environmental assessment accompanying Modification 1**

Modification 1 considered swamps, ground and surface water impacts in detail, but incorrectly restates negligible impacts conclusion regarding swamps in the extension area. This conclusion is no longer relevant due to the advice by the independent swamp monitoring panel.

The swamp assessment for Mod 1 should not have repeated the negligible impact conclusion made in the September 2014 environmental assessment, due to the evidence of far field impacts on swamps.

Further, in its plan for longwall 419 of July 2016 Centennial Coal extraction states that groundwater piezometer levels are affected at a distance of up to 2.25kms from the active longwall mining (along the strike of the lineament), with long term impacts observed at a distance of around 1.6km.

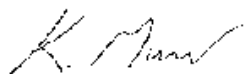
The 419 extraction plan describes similar impacts for Kangaroo Creek, East Wolgan, Narrow Swamp, and Sunnyside East, in addition to Carne West Swamp. In their 419 extraction plan the miner concedes mining impacts on nationally endangered swamps have occurred for decades. If the miner had stated in its 2014 EIS this damage history for swamp it undermined this evidence would have led to a different consent outcome for swamps (see attachment A for extracts from the 419 extraction plan of July 2016).

Further, the above evidence in extraction plan 419 by Centennial Coal confirms that the Springvale Mine is having and has had groundwater impacts outside the mine project area since it began mining operations and that these impacts impact on nationally endangered swamps.

The consent should be amended to avoid undermining swamps to defuse the on-going controversy regarding mine impacts on these items of national heritage listed swamps.

Thank you for considering this submission to the PAC regarding Mod 1 for the Springvale mine extension.

Yours sincerely,



Keith Muir  
Director  
The Colong Foundation for Wilderness Ltd

**Attached** – references and Attachment A

## References:

Connell Wagner PPI Energy Solutions, May 2005, Appendix I, in Springvale Colliery Longwalls 411-418 Subsidence Management Plan Application, Springvale Coal, Lidsdale.

Springvale Coal, Nov. 2006, Subsidence Management Status Report, Four Monthly Update, page 13 rapid groundwater levels rapid decline above 411; Attachment 5, table 4, decline in moss and fern species.

Centennial Coal, April 2014, *Environmental Impact Statement – Springvale Mine Extension Project* (SSD 5594).

Galvin, J., June 9, 2016, Advice for the Independent Monitoring Panel.

Centennial Coal, 419 extraction plan – see **Attachment A** below

**Attachment A** - extracts from  
Centennial Coal, Springvale Mine Longwall 419 Extraction Plan 22/7/2016, Part 2 of Preamble Evolution of the Understanding of the Interactions of Groundwater Behaviour and Mine Subsidence at Springvale Mine.

This extract below describes Carne West swamp, but this effect applies to other swamps previously (and future) undermined (pg. 15 of Part 2).

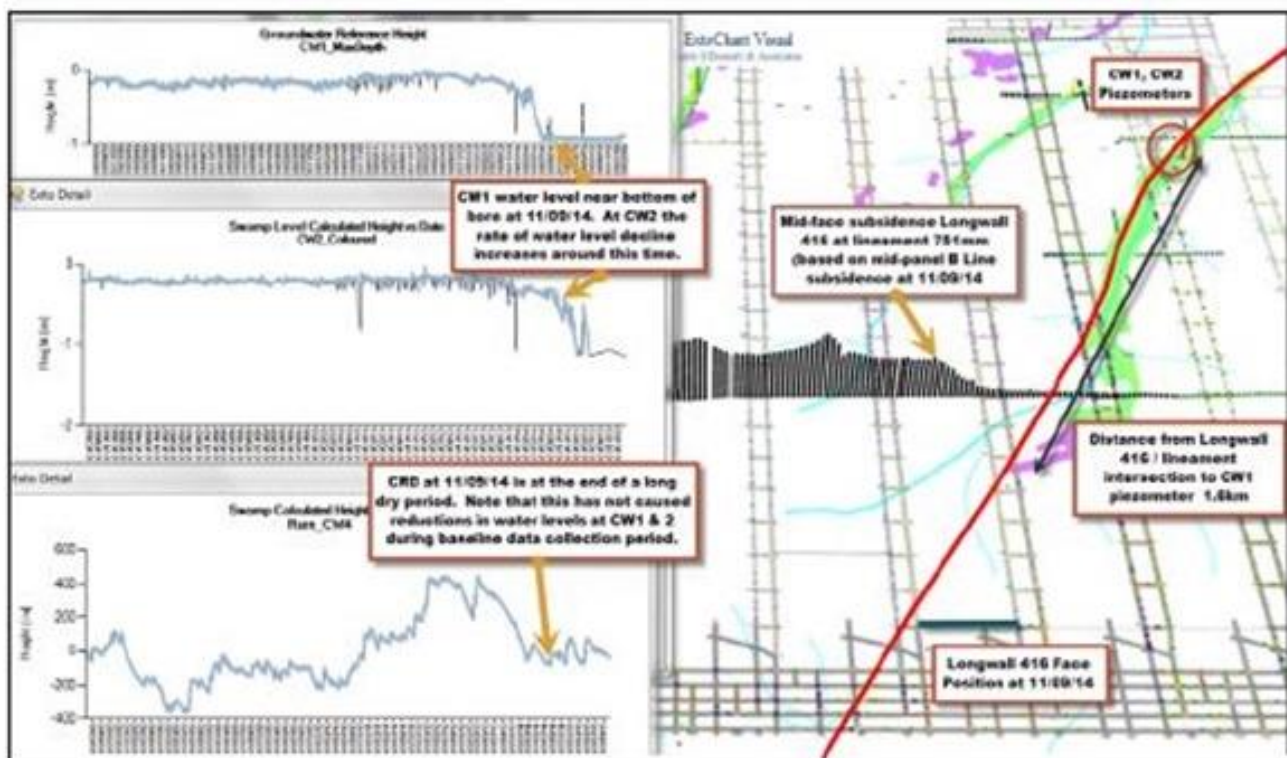


Figure 8: ExtoChart Visual image with THPSS, watercourses, underground mine workings and longwall face positions, eastern Deanes Creek Lineament fault, swamp piezometers and related subsidence rainfall and groundwater data at 11 September 2014

Figure 9 is an ExtoChart Visual image at 19 May 2015 which shows THPSS, watercourses, underground mine workings and longwall face positions, the eastern Deanes Creek Lineament fault, swamp piezometers and related subsidence, rainfall and groundwater data with a specific focus on Carne West Swamp. It illustrates the mining face positions and the development of subsidence at a time when the standing water level at both CW1 and CW2 piezometers have fallen to the bottom of the bores. It can be seen from the data presented on the left of Figure 9 that CRD is relatively stable following the long period of very low rainfall in 2013-14, which continued to affect standing water levels at a number of Newnes Plateau swamps at this point in time. The standing water levels at CW1 and CW2 piezometer dropped below any recorded in the baseline data and the hypothesis of rainfall pattern causality does not appear valid. At this point in time, Longwall 417 face has mined beneath the eastern Deanes Creek lineament fault, at a distance of approximately 1.0km from CW1 piezometer, which is a distance well in excess of locally documented effects of longwall mining to groundwater systems. Based on measurements on the B Line, first panel subsidence of up to 809mm occurred as a result of the mining of Longwall 417 in this area. It is considered possible that longwall mining under the eastern Deanes Creek lineament fault may have caused further impacts to standing water levels at CW1 and CW2 piezometers in the period after 19 May 2015.

It is evident from the data that changes to standing water level were able to be detected by either one (or both) of the CW1 and CW2 piezometers. Minor changes as a result of mine subsidence interactions with the lineament fault were detected at a distance of 1.8km along the strike of the lineament. Longer term changes to standing water levels were detected at a distance of 1.8km along the strike of the lineament.



Centennial coal's report explains longwall coal mining under geological lineaments, which the swamps overlie, has affected groundwater piezometer levels at a distance up to 2.25kms from the active longwall mining (along the strike of the lineament), with long term impacts at a distance of around 1.6km.

The report goes on to describe similar impacts to other swamps including Kangaroo Creek, East Wolgan, Narrow Swamp, and Sunnyside East.

The Conclusions (p.24 of Part 2) include the following:

#### Sunnyside East Swamp

Although rainfall patterns are a significant factor in the change in standing water level behaviour at Sunnyside East Swamp, it is considered that subsidence beneath the western Deanes Creek lineament fault may also have been a significant factor.

Aquifer piezometer data is not consistent with the hypothesis that the changes to standing water levels at Sunnyside East Swamp were due to changes to adjacent aquifer piezometer standing water levels.

It is evident from the data that changes to standing water level were able to be detected by either one (or both) of the SSE2 and SSE3 piezometers. Temporary changes (<3 months duration) as a result of mine subsidence interactions with the lineament fault were detected at a distance of 2.25km along the strike of the lineament. Longer term changes to standing water levels were detected at a distance of 1.5km along the strike of the lineament.

#### Carne West Swamp

The strongly negative CRD during the period when changes in groundwater levels occurred does not appear to be the only cause of the reduction in groundwater levels at these sites.

Water levels at CW1 and CW2 piezometers now display trends that are more rainfall dependent as opposed to predominantly groundwater dependent, which had been the case for the entire baseline monitoring period from 2005 up to 2014.

Aquifer piezometer data is not consistent with the hypothesis that the changes to standing water levels at Carne West Swamp were due to changes to adjacent aquifer piezometer standing water levels.

It is considered that longwall mining under the eastern Deanes Creek lineament fault may have caused impacts to standing water levels at CW1 and CW2 piezometers.

It is evident from the data that changes to standing water level were able to be detected by either one (or both) of the CW1 and CW2 piezometers. Minor changes as a result of mine subsidence interactions with the lineament fault were detected at a distance of 1.8km along the strike of the lineament. Longer term changes to standing water levels were detected at a distance of 1.6km along the strike of the lineament.

#### Back Analysis of East Wolgan Swamp, Narrow Swamp and Kangaroo Creek Swamp

Back analysis of data from East Wolgan Swamp, Kangaroo Creek Swamp and Narrow Swamp indicate that the hypothesis that directly undermining Type 1 & 2 lineaments may have been the cause of impacts to standing water levels at swamp piezometers.