## Introduction

We are writing to express our concern about further mining damaging the ecological area South of Sydney that is part of the Sydney Water Catchment. There is already considerable evidence of damage caused by longwall mining, in particular cracking of rocks, loss of water in creeks and drying of upland swamps. The application of the precautionary principle should preclude any new mining within the catchment areas.

New proposals for mining can only increase the risk of further loss of surface water and permanent damage to the catchment integrity. Sydney's population is growing inexorably and the possible reduction in rainfall due to climate change, the quantity and quality of the water supply is more valuable than any other resource. The desalination plant is an expensive alternative.

The removal of coal from the global energy mix has been prioritized as governments seek to reduce greenhouse gas emissions, and restrict the development of coal mines, and associated infrastructure. The absence of any practical methods to eliminate carbon dioxide from the atmosphere or to minimize carbon dioxide emissions from fossil fuel power plants has significantly influenced utilities and governments to turn away from coal.

More recently, coal use has declined dramatically in Australia partly motivated by our pledged support of the 2015 Paris Agreement. As of July 2020. A number of countries (e.g. France and Germany) have shut down their last coal burning power plants or closed their coal mines in 2004 and 2018 respectively. Other countries have committed to phase out coal use. The reasons for this are manifold and likely to a considerable extent, irreversible. The most compelling reason for this trend is the relative cost of fuel as wind and solar power drop in price. The Bloomberg News reports: "It comes down to cost. Coal power is more expensive than renewables in many places and, hence, coal is the first fuel priced out of the market when demand falls. Its plunging use amid the lockdowns is a boon for efforts to fight climate change, hastening a shift that was already underway to weed out the "dirtiest fossil fuel".

The recent impact of storminess along the Australian East Coast suggests that climate change is already apparent and will further impact the lives of the Australian population. Coal burning is already a significant contributor to the amount of carbon dioxide produced in this country and the extension promoted by Illawarra Metallurgical Coal does not address the possible impact of this outcome. Nor does Illawarra Metallurgical Coal make any mention of methane gas produced by the mining process.

The current plan provided by Illawarra Metallurgical Coal supports the mining of Area 5 alone. It is understood that the same organisation will return in a few years to mine Area 6 as was their plan initially. This can be prevented by making coal mining in the catchment illegal. We also note the name change from Illawarra Coal to Illawarra Metallurgical Coal to attempt to support the use of coal in the steelmaking process.

## Damage to Ecological Factors in Mined Areas

### Damage to Wildlife

Several investigations have been conducted on the swamps in the projected Area 5 and these are summarised in the Sydney Water report.

“The swamp and immediately adjacent area contain two endangered ecological communities: montane peatland and swamps, and Southern Highlands shale woodlands.

Seven species listed under the Threatened Species Conservation Act 1995 are also found in the swamp: giant dragonfly, Wingecarribee leek orchid, yellow loosestrife, Wingecarribee gentium, swamp gum, Austral toadflax and Australian bittern. The Wingecarribee leek orchid is found only in the swamp, and the Wingecarribee gentium is found in the swamp and at only one other location.

“The swamps play an important role in filtering runoff from the 40 square kilometre rural catchment area feeding Wingecarribee Reservoir. The swamp and reservoir are located about 10 kilometres south-east of Bowral, 130 kilometres south of Sydney.” This shows the extent of the catchment that will be affected by Area 5.

https://www.waternsw.com.au/supply/heritage/natural-heritage#:~:text=Seven%20species%20listed%20under%20the,Austral%20toadflax%20and%20Australian%20bittern.

### Damage to Vegetation

It is well known that coal mining has deprived upland swamps of moisture so that they have dried out. This is a serious loss of habitat that is used by a large number of species of both plants and animals as indicated above.

### Damage to Aboriginal sites

The Aboriginal report runs to 200 pages, however of significance is the following statement that “All sites are highlighted by the Aboriginal community to have high cultural significance.”

Within the Subject Area, 28 previously recorded Aboriginal heritage sites were identified, comprising a combination of 12 Axe Grinding Groove sites, 1 Isolated Find and 15 Sandstone Shelters with Art, Deposit, Potential Archaeological Deposit or a combination of all types. A field survey was undertaken to revisit, these sites and the results of the survey are included in Appendix A. An additional 3 sites were identified during the field survey and fall within the Subject Area. They include two rock shelters with art and a Potential Archaeological Deposit (PAD) and one Axe Grinding Groove site. It is obviously of great consequence to the local Aboriginal community if these sites become damaged by longwall mining.
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-33143123%2120220427T061101.456%20GMT

Their cultural significance will be lost and the local Aboriginal community will be ignored once again.

## Steelmaking

There appears to be a belief that Bluescope steel relies on coal from Dendrobium Mine even allowing for the distribution of steelmaking on the cover of the recent submission to Planning & Environment Department, however this is untrue. Much of the coal mined at the Dendrobium Mine is exported through the Port Kembla Coal Loader to several countries. A minimal amount of coal is used in the steelmaking process. Bluescope is committed to reducing its use of coal or coke by 2050. To this end various experiments are currently underway to examine other alternative blast furnace treatments that may be possible. In particular, Bluescope is examining the use of hydrogen as a fuel source. There are many processes being considered in the production of steel both here and overseas and it is likely that one of these systems will be developed to maturity and it will be a relatively simple matter for Bluescope to adopt the newest and best technique that will produce the steel that is desired by its customers.

The essential point is that metallurgical coal is unlikely to be required in the future as alternatives become apparent.

## Climate Change

One of the most obvious effects of coal mining and burning of fossil fuels is the continued production of greenhouse gases. The recent election of Federal parliament has clearly demonstrated the risk of further community concerns with the continued use of coal within the steelmaking and power generation industry and therefore this practice should be stopped and Bluescope should be encouraged to further develop alternative techniques to address the steelmaking process.

## Mining in Catchment

Whilst the Area 5 is proposed to be mined, the Dam Safety Committee has expressed its concern "to reduce the likelihood of cracking the dam walls, longwall extraction should approach no closer than 1,500 metres to the dam walls." The prosed mining does not comply with the above quote from the Dam Safety Committee.

Longwall mining as proposed for Area 5 is known to be destructive with cracking in previously mined areas suffering from frequent ecological disturbance and loss of water in pools, swamps and creeks.

### Subsidence

As a natural consequence of the longwall process, then large areas of the natural bushland will suffer subsidence and the consequences of that mean than there will be significant water losses from the area that will be undermined.

## Water Losses

"Peak annual surface water losses are predicted to have reduced by 78% in comparison to the previous estimates" a quote from the Executive summary. However, it does not indicate the quantity of water losses that would be experienced – merely 78% less than previously assessed.

## Currently difficult to assess sustainability issues

Despite technological advancements that have made the coal industry more sustainable, mining still uses significant amounts of resources including water, land, carbon and energy and often causes severe harm to the environment. This damage, if not correctly managed can last for decades after mining operations have shut down and make the land more vulnerable to natural processes like soil erosion It can worsen after the equipment is taken out. Now, as industries and governments around the world look for ways to reduce carbon dioxide output and the environmental impact, experts and individuals from the coal mining industry are pushing the industry to take a serious look at how it can increase its sustainability. By instead of using new, alternative low-impact mining techniques mining companies can reduce their environmental impact.

With many of these techniques, companies can significantly reduce surface disturbance at coal mining sites, lower soil erosion and move less material that would need backfilled or collapsed after the longwall has passed. Lowering interference in this way can both reduce environmental impact and result in less work when preparing a site or rehabilitation. We note that there is no mention of rehabilitation of the damaged environment in Illawarra Metallurgical Coal's plans

### Reusing mining waste

Coal mining naturally produces significant amounts of waste such as rocks and wastewater. It is unfortunate that Illawarra Metallurgical Coal has no plan in evidence to dispose of waste material other than to transport it to the well-recognised emplacement at West Cliff. Transportation of up to approximately 1.1 Mtpa of coal wash by road from the Bluescope washery to the West Cliff Stage 3 and Stage 41 Coal Wash Emplacement. Development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement. Supply of coal wash to customers for engineering purposes (e.g. civil construction fill) or for other beneficial uses. Note that no amount is specified for civil construction. Also, the use of diesel-powered trucks to transport the waste to West Cliff increases the overall greenhouse gas emissions.

When treated, mine water can be reused in just about any fashion for agriculture, as coolant, in on-site dust suppression and for drinking water. There is currently no plan for water use other than to pump it into Allans Creek. A serious shortfall on the part of Illawarra Metallurgical Coal.

### Better Equipment

A push towards exclusively using electric equipment could easily result in significant carbon savings for coal mining companies. Businesses wanting to become more sustainable could also upgrade to more advanced, durable equipment that lasts longer, reducing the turnover of machinery and decreasing the resources needed. Improved durability can also reduce the environmental costs of damaged equipment like rubber or plastic thrown away as a piece of equipment breaks down. Simple switches, for example — like adopting tires that provide better longevity and higher ROI can cut down on equipment costs over time while also reducing how much rubber and plastic a coal mining operation outputs.

## Rehabilitation of Mining Sites

Despite recent strides and modern technology, the coal mining industry remains unsustainable in many areas. Fortunately, there are a variety of technologies and techniques and in development that the sector can use to reduce its environmental impact.

Advanced land rehabilitation techniques, coupled with low-impact coal mining methods and reuse of rock waste, can cut back on the impact that mining operations have on their immediate environment. Companies can also use new equipment powered by electric engines to reduce their carbon footprint and become more eco-friendly.

## Salinity in the Catchment

In Australia, more than 2 million hectares of farmland is damaged by salt, primarily in Western Australia and the heavily irrigated Murray-Darling basin, the country's breadbasket in the east. This has an estimated economic impact of more than $700 million per year. A growing part of the problem is a reduction in rainfall that is widely blamed on climate change and leads to desiccation of the land. A federal government audit of the country's drylands predicts a threefold increase in soil salinity by 2050. It is reasonable that much of the Sydney Water catchment will suffer similar fate as water become unavailable to plants and animals through the extraction of water for humans.

## Coal Mining

The presumption by the Greenhouse Gas Assessment that "this illustrates that the State of NSW is adopting an approach to emissions reduction that balances both socio-economic factors and emissions reduction opportunities for the long-term benefit of the State." Is unsustainable. It is more than evident that the recent Federal election results in Australia indicate the population's ongoing concern to prevent as far as possible increased emissions of greenhouse gases.

Methane ($CH_4$) is a hydrocarbon that is a primary component of natural gas. Methane is also a greenhouse gas (GHG), so its presence in the atmosphere affects the earth's temperature and climate system. Methane is emitted from a variety of anthropogenic and natural sources. Anthropogenic emission sources include landfills, oil and natural gas systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial processes. (US EPA) (https://www.epa.gov/gmi/importance-methane#:~:text=Methane%20(CH4)%20is%20a,%2Dinfluenced)%20and%20natural%20sources)

According to Ember, an independent energy think tank that uses data-driven insights to shift the world from coal to clean electricity, methane emitted by Australian coal mines is a huge unacknowledged issue and there is no system in place to assess this emission. Dendrobium mine does not report its emissions of methane to the regulator nor to the community as it should. There is no way that the community can assess the impact of coal mining and methane production without this information. It is an obvious requirement for coal mining as the construction of ventilation shaft is considered important at Dendrobium.

The presumption by the Greenhouse Gas Assessment that "*The Public actions and policies should be carefully targeted and should not undermine the incentives for, or capacity of, the private sector to individually manage risk*." In a similar method, climate change and the emission of greenhouses gases is now particularly unacceptable and cannot be said to "individually manage risk"

## Cordeaux Road Noise

The movement of cars (by miners) and trucks delivering equipment to the mine is already significant and causes considerable loss of amenity to the community. Illawarra Metallurgical Coal deliberately restricts the passage of cars and trucks to avoid school times by about an hour. Nevertheless, there are others (drivers and truck drivers) that apparently disregard this "no-go timetable" and travel up and down Cordeaux Road regardless of community concern for the impact of the noise they generate.

The drivers code of conduct expressly stated that penalties would apply to those found breaching the code of conduct. These ranged from first breach - $500, second breach - $1000, and third breach - $3000 donation to a charity. These penalties were changed without notice to the community to the following 1st occurrence – warning letter, 2nd occurrence – warning letter and suspension of driver from site for a defined period, 3rd occurrence – final warning letter and review of the person's or company's final warning letter and review of the person's or company's continued working association with Illawarra Metallurgical Coal. Note that these breach notices apply over a 12-month rolling period. Dendrobium Mine reserves the right to review a person's or company's continued working association with the mine following any breaches of the Code.

This is obviously a downgrading of the conditions of the transgression and the previous penalties should reinstated.

## Rail Track Noise

One of the most common complaints by the local community is the number of complaints about brake squeal caused when trucks descend from the storage area (Kemira Valley) to Bluescope. Despite many attempts to rectify this issue braking of the train continues to be an issue for local community members.

## Bushfire Risk

It has long been recognised that the local area and the proposed coal mining area are subjected to a bushfire threat. Yet there is little or no acknowledgement of this threat. It is possible to imagine a large group of miners below ground desperate to return to the surface as the impact of a local bushfire has had a devastating impact on their homes. It is difficult to imagine how the coal miners might react in such circumstances. They may opt to leave their job and return independently to the surface or may commandeer a vehicle to transport them back to the surface.

How does Illawarra Metallurgical Coal expect to address this issue at the Dendrobium Mine?

Yours faithfully,

…….. ……

Janet and Christopher Haley

358 Cordeaux Road

Mount Kembla

NSW 2526