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Preserving the Balance of Nature

To: coal-mine-consultation@epa.nsw.gov.au

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To whom it may concern

Re: Regulation of NSW coal mine licences consultation

Lithgow Environment Group (**LEG**) is a not-for-profit environmental organisation established in 2005 with the principal aims of conservation, protection and enhancement of local natural environments. LEG has taken an evidence-based approach by conducting regular Water Quality, Swamp, Mine Subsidence, Threatened Species and other Monitoring to establish baseline data. LEG is also a member of the Gardens of Stone Alliance, which works for the full protection of the Gardens of Stone region.

Over the past 19 years LEG has reported numerous mining-related incidents of environmental harm either directly to the Environmental Protection Agency (**EPA**), or to the Sydney Catchment Authority; Commonwealth Department of Climate Change, Energy, Environment and Water (**DCCEEW**); NSW Department of Environment, Water, Heritage and Arts (**DEWHA**); or NSW Department of Planning & Environment, Planning Assessment Commissions (**PACs**) and/or Independent Planning Commission (**IPC**) on individual development proposals.

LEG has encountered a disturbingly high number of pollution incidents that have gone unreported by mining companies; inconsistencies in EPL licence limits for pollutants across coal mines; many errors or omissions in pollutants and loads reported in Environmental Impact Statements (**EISs**) and other Planning documents; incorrect data on the National Pollutant Inventory (**NPI**) for mines; and more.

Allied to the above is the difficulty for the Environmental Protection Agency (**EPA**) to address cumulative impacts, especially where former NSW Government-owned coal mines (Angus Place & Springvale Colliery) and power stations (Wallerawang & Mt Piper PS) are so intrinsically linked by coal conveyors, haul roads, pipelines, etc that pinpointing the source of noise, dust, water pollution is difficult. However allowing Premises to deflect blame; create doubt and confusion; obfuscate; deny; defer; and delay until a complainant gives up and goes away is not acceptable practice either.

The EPA has said this consultation is an important opportunity to have a look at the sector as a whole and ensure licenses are operating as intended. To that end, LEG recommends that the EPA:

1. Establish minimum mine wastewater limits in keeping with ANZECC guidelines for: salinity, turbidity, temperature and heavy metals (including zinc, nickel, arsenic, PFAS, PCBs, manganese, formaldehyde, boron, cadmium, chromium, fluoride, hexavalent chromium, cobalt, lead, selenium, solcenics and potentially harmful decomposition substances)
2. Consider the cumulative impacts of air and water pollution when issuing licence conditions to coal mine operators
3. Mandate Pollution Reduction Programs or Clean Up Notices where mine water discharges cause breaches of ANZECC guidelines
4. Consider infrasound and low-frequency noise impacts when issuing licence conditions
5. Establish minimum air pollution licence limits in keeping with World Health Organisation (**WHO**) Guidelines for: Coarse particulates (PM10), Fine particulates (PM2.5), nitrogen oxides, lead, mercury, arsenic, sulfur oxides, benzopyrene, crystalline silica dust, carbon monoxide, carbon dioxide (CO₂) and methane
6. Mandate Pollution Reduction Programs or Clean Up Notices where air pollution cause breaches of World Health Organisation benchmarks
7. Expand the monitoring of Camp Gully Creek in Illawarra to other water bodies receiving wastewater from coal mines
8. Conduct its own audits and monitoring of coal mines, given recent concerns about conflicts of interest, fraud, and lack of transparency in the consulting industry.
9. Undertake timely and proportionate actions including prosecution when instances of licence breaches or non-compliance,
10. Require robust cost-recoverable monitoring of non-compliant mines
11. Ban tyre dumps and sewerage sludge at all coal mine sites
12. Heavily weight breaches of relevant legislation when making fit and proper assessments under s 83 *Protection of the Environment Operations Act 1997 (NSW)* (**POEO Act**)
13. Establish subsidence protection zones around all important geological, ecological or cultural features, including vulnerable features like streams, swamps, cliffs and rock overhangs. These protection measures should be made mandatory for current, as well as future longwall mining operations, effective immediately.
14. Mandate adequate surface flow and near-surface groundwater monitoring in Subsidence Management Plan areas to create a comprehensive picture of these water systems and how these systems are affected by mining over time.

15. Only enable mining that does not impact upon a catchment's capacity to collect or convey water or at risk of subsidence impacts
16. Require coal mine operators to:
 - a. Enter into best practice pollution reduction programs on non-road diesel exhausts by the end of 2024;
 - b. Be jointly and severally responsible for meeting regional ambient air quality targets;
 - c. Be subject to load base fees for all air and water pollutants,
 - i. Air: Coarse particulates (PM10), Fine particulates (PM2.5), nitrogen oxides, lead, mercury, arsenic, sulfur oxides, benzopyrene, carbon monoxide, crystalline silica dust carbon dioxide (CO₂) and methane
 - ii. Water: salt, nickel, zinc, arsenic, copper, lead, mercury, oil and grease, suspended solids, boron, cobalt and selenium
 - d. publicly and in real-time share information on community concerns, such as air pollution, water contamination, and incidents
 - e. disclose of all licence reporting to the public
 - f. Measure greenhouse gas emissions (including fugitive emissions) directly on-site and publicly disclose this information.
 - g. Conduct independent and systematic greenhouse gas emissions measurements for all active and inactive mining areas.
 - h. Implement best practice technology to minimise methane leaks,
 - i. Identify, monitor, disclose, and quickly address methane leaks,
 - j. Adopt measures for reducing emissions to meet NSW climate targets,
 - k. Investigate and publish reports on how to phase down emissions,
 - l. Identify technically feasible, best-practice technologies to reduce climate pollution,
 - m. Provide progress updates on their investigations and detail actions taken to implement the identified measures
17. Conduct investigations on:
 - a. Sediment dam and infrastructure conditions to ensure that they are capable of withstanding increased climate extremes
 - b. The environmental and health impacts of diphenylmethane diisocyanates usage at coal mines
 - c. Acid mine drainage issues at Pine Dale Mine, Cullen Valley Mine, and others
 - d. The presence of formaldehyde and PFAS in Lithgow Local Government Area
 - e. The pollution impacts and rehabilitation of Canyon Colliery

- f. The presence of PCBs in historic Lithgow mines
- g. Subsidence impacts of longwall mining on upland peat swamps and environmental management responses including siltation and sediment control, remediation.

This submission addresses the following in further detail below:

1. Statutory context of the EPA
2. Water pollution concerns,
 - 1) Turbidity/Total Suspended Solids (TSS)/Total Dissolved Solids (TDS)
 - 2) Electrical Conductivity/Salinity
 - 3) Solcenic Fluids
 - 4) PFAs (Per- and polyfluoroalkyl substances)
 - 5) PCBs
 - 6) Acid mine drainage
 - 7) Temperature Pollution from minewater Discharges
 - 8) pH/alkalinity pollution
 - 9) Manganese pollution in minewater discharges
 - 10) Arsenic pollution in minewater discharges
 - 11) Nickel and zinc in minewater discharges
 - 12) Fish Kills in the Coks River, Lake Wallace, and Lake Lyell
 - 13) Boron, Cadmium, Chromium, Fluoride, Hexavalent Chromium, Cobalt, Lead, Selenium in minewater discharges
 - 14) Dumping brine waste and solcenic oils into underground mine workings
 - 15) Silcrete - Part B diphenylmethane diisocyanates
 - 16) Sewage Sludge
 - 17) Cumulative Impacts on Water Resources
3. Air pollution
 - 1) Particulate air pollution
 - 2) Coal Combustion
 - 3) Crystalline silica dust
 - 4) The flaw of averages' – real time monitoring required
4. Noise Pollution
 - 1) Infrasound or low frequency noise
 - 2) Temperature inversions/wind/terrain effects on noise
5. History of failing to report to be considered under s 86
 - 1) Threatened species
 - 2) Indigenous heritage sites
6. Polluter pays regime
7. Independent and real time monitoring
 - 1) Legacy of failure to report incidents reflects a broken system
8. Burial of tyres on mine sites

9. Methane
10. Credible planning for mitigating climate impacts
11. Enforcement
 - 1) Statutory powers underutilised
 - 2) Weak regulatory responses fail to deter repeat polluters
 - 3) Subsidence damage caused by bord & pillar, partial extraction, and longwall mining to upland peat swamps must be a focus area

1. STATUTORY CONTEXT OF THE EPA

The EPA is established under the *Protection of the Environment Administration Act 1991* (NSW) (**Protection of the Environment Administration Act**). At s 6 of the Protection of the Environment Administration Act, the Objectives of the EPA are listed as follows:

- (a) to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development, and
- (b) to reduce the risks to human health and prevent the degradation of the environment, by means such as the following—

- promoting pollution prevention,
- adopting the principle of reducing to harmless levels the discharge into the air, water or land of substances likely to cause harm to the environment,
- taking action in relation to climate change,
- minimising the creation of waste by the use of appropriate technology,
- regulating the transportation, collection, treatment, storage and disposal of waste,
- encouraging the reduction of the use of materials, encouraging the re-use and recycling of materials and encouraging material recovery,
- adopting minimum environmental standards prescribed by complementary Commonwealth and State legislation and advising the Government to prescribe more stringent standards where appropriate,
- setting mandatory targets for environmental improvement,
- promoting community involvement in decisions about environmental matters,

- ensuring the community has access to relevant information about hazardous substances arising from, or stored, used or sold by, any industry or public authority,
- conducting public education and awareness programs about environmental matters.

At s 7 of the Protection of the Environment Administration Act, the general functions of the EPA include ensuring that the best practice measures are taken for environmental protection and enquiring and reporting of those measures.

The EPA is the appropriate regulatory authority for coal mining activities per s 6 *Protection of the Environment Operations Act 1997* (NSW) (**POEO Act**).

At s 63 POEO Act, conditions on an Environmental Protection Licence (EPL) may be imposed by a regulatory authority and s 66 specifically relates to monitoring requirements as licence conditions. At s 58, the appropriate regulatory authority may vary a licence, whether or not conditions are already attached to the licence.

In light of the EPA's statutory objectives, functions and powers, LEG urges the EPA to immediately act on its concerns regarding the profound and possibly irreparable environmental degradation and human health impacts caused by coal mines throughout NSW as the appropriate statutory body to manage such concerns.

2. WATER POLLUTION

Licence conditions on coal mines in NSW are below the best practice measures that need to be taken to protect human health and the environment. Australian drinking water standards fall below global standards and the World Health Organisation benchmarks must be adopted in NSW when assessing licence limits.

A study of eight Australian coal mines showed that coal waste increased nickel levels in nearby waterways by 25 times, zinc by over 9 times, and salinity by more than 6 times. (Belmer N, Wright I, *The regulation and impact of eight Australian coal mine waste water discharges on downstream river water quality: a regional comparison of active versus closed mines.*) These pollutants are harmful to aquatic plants and animals, causing metals to build up in the food chain and reducing the variety of species in rivers.

(<https://researchdirect.westernsydney.edu.au/islandora/object/uws:59218/>)

LEG has conducted regular water quality monitoring at multiple sites in the Upper Cocks River Catchment since 2006. Data can be viewed at <https://www.lithgowenvironment.au/docs/leg->

[streamwatch-database-sep24.pdf](#). This has given LEG a good understanding of the types of pollutants; pollution hotspots; legacy pollution issues; adverse impacts on water quality, aquatic life, endangered swamps; and downstream impacts in the Greater Blue Mountains World Heritage Area.

LEG's water quality monitoring data demonstrates that EPA POEO Licencing processes have been successful in improving water quality parameters at some sites, for example LEG Site 2 Kangaroo Creek. Salinity has reduced from highs of 1160 EC to around 100 EC, and once common incidents of highly turbid black water contaminated with coal fines have now been eliminated.

However at other sites pollution levels remain at dangerous, toxic levels. The Western Coal Services discharge at LDP001 was described by Australia's leading scientist on water pollution from coal mines, Dr Ian Wright, on ABC News on 7 November 2023 <https://www.abc.net.au/news/2023-11-07/water-contamination-lithgow-coal/103067856>

"In the whole of the Warragamba drinking catchment that is the worst point source of waste I have ever measured."

And the EPA's POEO Licence for LDP001 –

"That is one of the most ineffective pollution licences I have ever seen," he said.

Springvale LDP001 is LEG Site 18 (<https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>). LDP001 has no POEO Licence limit for salinity, which increased 6-fold from 1,240 EC in 2006 to 7,780 EC in August 2018, most recently 3,516 uS/cm on 6/6/2024. Dr Wright reported that the salt, nickel, and zinc pollutants in LDP001 minewater was poisonous to aquatic life. By his calculations a recent proposal to increase the LDP001 discharge by five Olympic-sized swimming pools per day would increase the amount of salt from roughly six to eight tonnes a day.

In 2017 the Springvale-Mount Piper Water Treatment Plant was approved to beneficially reuse 42ML/day of polluted minewater from Springvale & Angus Place Collieries for cooling water at Mount Piper Power Station, rather than discharging it via LDP009 into the Coxs River.

Water quality in the Coxs River was supposed to improve. However salinity at Lidsdale actually rose (see Site 7 <https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>) from around 1200 EC in 2017 to 2100 EC in January 2020, when a fish-kill also occurred, currently 1130EC. Centennial recently lodged MOD 5 & 8 seeking to avoid treating minewater at the Springvale-Mount Piper Treatment Plant, and discharge it via LDP001 into Wangcol Creek instead. A regressive step, which the EPA should strongly oppose.

Ordinarily, water pollution at such levels would give rise to water pollution offences, but the licence regime currently protects polluters from prosecutions of those offences. This is a system that is broadly ineffective at protecting the environment and human health.

Below are some of the water pollution issues LEG has recorded in the Upper Coxs River catchment, in no particular order, which the EPA POEO Licence process could do more to adequately regulate –

2.1 Turbidity/Total Suspended Solids (TSS)/Total Dissolved Solids (TDS)

TSS measures actual particles in water, while Turbidity measures reflected light off particles. TSS can measure silt/sediment, but not solcenics, humic stains, dyes etc which Turbidity (NTU) can detect.

The ANZECC (<https://www.waterquality.gov.au/anz-guidelines/guideline-values/default>) upper limit for turbidity in inland waterways is 25 NTU. EPL limits for turbidity in coal mine discharges vary greatly, and invariably exceed 25 NTU. Mount Arthur Mine in the Hunter Valley has a POEO Licence Limit of 120 NTU, Charbon Colliery has 50 NTU, most Lithgow mines are 30 NTU.

The EPA needs to explain to communities why dirty discoloured water is regarded as more acceptable in some creeks, rivers, and lakes than in others? For example -

- **Charbon Colliery EPL528** has a 50 NTU turbidity limit. The 2023 Annual Review reported 2900 NTU at LDP3, 58 times above the licence limit. And this was not an isolated incident. In 2021 non-compliances were recorded for '*Overflow of Haystack South Sediment Dam*' and '*TSS Exceedance*'. In 2017 non-compliances for '*Volume of drilling mud and/or muddy waters received from drilling operations exceeded weekly limit*'. In 2016 '*Exceedance of concentration limits for total suspended solids and turbidity*'. In 2015 '*Limit exceeded for Total Suspended Solids and Turbidity at LDP002 & LDP003 on several days throughout September*'. More turbidity non compliances were recorded in 2014, 2012, 2011, 2005, 2001, and 2000. Why has the EPA allowed 'serial offending' of turbidity exceedances from Charbon Colliery to go on for 23 years?
- **Springvale Colliery (EPL3607)** has a 30 NTU limit, regularly exceeded at LEG Site 4. Springvale is the worst POEO Licence offender in the Lithgow region (and perhaps NSW), recording **1,027** Licence non-compliances from 2000 to 2023. Sediment storage ponds at the pit-top weren't cleaned out for at least 10 years. On 23 February 2015 the EPA issued Springvale with Penalty Infringement Notice of \$15,000 when coal fines were discharged into a downstream wetland.
- **Wangcol Creek** – Turbidity exceeded the 25 NTU ANZECC upper limit on virtually every occasion tested by LEG since 2006, ranging from a low of 40 NTU to a high of 400 NTU. LEG Site 5 is downstream of Mount Piper Power Station (EPL13007). Energy Australia claim Mount Piper PS is

a 'zero discharge' facility. Yet LEG has also recorded large discharges of warm water exceeding the limits of our Electrical Conductivity meter. In 2007 a non-compliance was recorded for 'Uncontrolled discharge into Neubecks Creek from Mount Piper cooling tower #1 following blockage of filter screens'. Note this non-compliance was issued on EPL766 (Wallerawang Power Station) not Mount Piper EPL13007. Note also the name change from Wangcol to Neubecks Creek. Coal mine and power station operators tend to 'muddy the waters' by attributing impacts to different Premises, different EPLs, change the name of waterways when it suits etc. NSW Water may be complicit. NOW Gauge 212055 on Neubecks Creek is mapped in the wrong location and has invariably recorded Salinity levels much lower than recorded by LEG on particular days, and/or the Gauge malfunctioned on days when serious pollution incidents occurred. The same applies to NOW Gauge 212054 on the Coxs River Wallerawang Power Station. EPA regulators may be relying on erroneous data from faulty NOW instruments, whilst ignoring independent monitoring data by Dr Ian Wright, Hunter Environment Centre, and LEG.

- **Clarence Colliery EPL726** - The Clarence Colliery coal-fines spill into the Wollangambe River and Greater Blue Mountains World Heritage Area (**GBMWhA**) on 21 December 2023 was reported by LEG, not by Centennial. This highlights an ongoing issue with Centennial mines locally - failure to report incidents of environmental harm. The EPA issued EPL726 with a Prevention Notice (Reference Number 3507989 SR-2006) after EPA officers observed turbid water discharging via the Main Dam into the Wollangambe River. EPA officers also suspected there was a build-up of coal fines/coal material. The Clean-up Notice required the Licensee to engage a suitably qualified ecologist to undertake an ecological assessment of any environmental impacts that may have resulted from the discharge of turbid water and coal particles entering the Wollangambe River, and recommend options to recover any coal fines and remediate the environmental impact. It also required the Licensee to engage a suitably qualified engineer to recommend options to improve the water management system. Too little too late however, damage had been done.



Photos 1-3: Clarence Colliery coal-fines spill into Wollangambe River – 21 December 2023

This recent event occurred only a few short years after the collapse of Reject Emplacement Area 3 (REA3) on 2 July 2015 released 2,330 tonnes of coal fines into the Wollangambe River & GBMWA. The Land & Environment Court imposed penalties on Clarence Colliery totalling \$1,050,000 plus \$106,010 in investigation and legal costs - the single largest fine following prosecution by the EPA.

REA3 was approved by Lithgow City Council in 1993. The collapse of a dam built of unconsolidated coarse reject was clearly foreseeable. The fact REA3 had been full since 2011 and overtopping could occur was clearly foreseeable. Why do the EPA always wait for incidents of environmental harm to occur before taking action? The EPA must review sediment dam and infrastructure conditions on all coal mine EPLs to ensure that they are capable of withstanding increased climate extremes.



Photo 4-11: Clarence Colliery Reject Emplacement Area ("REA") 3 – collapsed on 2 July 2015

Inconsistent EPL limits for Turbidity/TSS/TDS at various coal mines in different catchments is far more than just a dirty water issue. Sediment is an important environmental stressor in creeks, rivers, lakes, and wetlands. It can block gills of aquatic biota and blanket streams with fine sediment that can change photosynthesis in the waterway (ANZECC, 2001).

For example, the Australian Platypus Conservancy (<https://platypus.asn.au/>) identifies three factors adversely related to Platypus status –

1. Nutrient enrichment, especially elevated levels of Phosphorus in water. Phosphorus promotes algal blooms and low levels of oxygen, causing many aquatic invertebrates to disappear.
2. The amount of suspended solids in surface water. Given that Platypus shut their eyes underwater and feed at night, the adverse impact of suspended solids is unlikely to be due to poor water clarity. Instead it is that unconsolidated fine sediment provides poor habitat for most aquatic macroinvertebrates.
3. The concentration of metal contaminants (lead, zinc, and cadmium) in bottom sediment. High levels of metal contaminants affect freshwater fish and macroinvertebrate diversity and abundance. Direct toxic effects could also occur, for example through bioaccumulation. Because heavy metals bind to bottom sediment, they can remain in the environment long after the primary contamination source has been eliminated.

Many areas of dead/damaged peat swamps and dry desiccated creeks above Angus Place, Clarence, and Springvale Collieries have allowed stormwater runoff to mobilise 1000s of tonnes of sediment into the Wolgan River, Wollangambe River, Bungleboori Creek, Kangaroo Creek, Farmers Creek, and ultimately GBMWHA. Why hasn't the EPA required remediation of this swamp damage?

Turbidity is a generic pollution issue affecting all aquatic life in NSW, regardless of which catchment. The EPA must apply statewide standards on EPL licences for turbidity/TSS/TDS, rather than take an ad-hoc approach to appease individual mines. The EPA must protect the environment, not mines.

2.2 Electrical Conductivity/Salinity

Salinity is a generic pollution issue at virtually all coal mines in NSW, exacerbated in the Lithgow region by power station cooling tower blowdown which produces huge quantities of brine waste four times saltier than sea-water. This is not just common table-salt (Sodium chloride), but salts of Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, and Zinc, with associated heavy metal pollution issues for the Coxs River catchment.

The Coxs River is the second largest river supplying water into Lake Burragarang/Warragamba Dam. Saline seeps are not common in the Sydney Drinking Water Catchment, unlike other NSW catchments. The 2019 Sydney Drinking Water Catchment Audit identified that salinity at several sampling sites (DWA2, DWA9, DWA12, DWA27, DWA39, DWA311) showed a rising trend in salinity from 2010 to 2019 (*Sydney Drinking Water Catchment Audit 2019 – Volume 3*).

Salinity in Lake Wallace (LEG Site 14) almost doubled from 690 $\mu\text{S}/\text{cm}$ in August 2007 to 1320 $\mu\text{S}/\text{cm}$ on 21 August 2018. These salinity levels exceed the recommended guidelines for protection of aquatic ecosystems of **350 $\mu\text{S}/\text{cm}$** (*ANZECC, 2000, 3.3. Physical and chemical stressors, Table 3.3.3*).

A river of salt was recorded by LEG flowing under the Castlereagh Highway into Wangcol Creek on 9 April 2016. Salinity levels were too high to measure with standard instruments (ie.>10,000 $\mu\text{S}/\text{cm}$).



Photos 12-14: Salt discharge along Castlereagh Hwy near Mt Piper Power Station – 9 April 2016

The EPAs approach to managing salinity pollution from coal mines and coal-fired power stations is inconsistent. Many mines have no POEO Licence Limits, while others vary greatly -

- Wallerawang Power Station “Tortuous Watercourse”/LDP9 (LEG Site 23) had a 2600 $\mu\text{S}/\text{cm}$ limit (*Licence Variation Application EPL766, July 2010*);
- Springvale Colliery EPL3607 had a 1200 $\mu\text{S}/\text{cm}$ licence limit at LDP009;
- Angus Place Colliery EPL467 has a 350 $\mu\text{S}/\text{cm}$ at LDP1;
- Western Coal Services LDP1 has no salinity limit. Salinity increased six-fold from 1240 $\mu\text{S}/\text{cm}$ in 2006 to a high of 7,780 $\mu\text{S}/\text{cm}$ in August 2018, most recently 3,516 $\mu\text{S}/\text{cm}$ on 6/6/2024;
- Charbon Colliery EPL528 – No licence limit, despite up to 4,380 $\mu\text{S}/\text{cm}$ having been recorded.
- Wambo Coal Mine – No licence limit. Monitoring Point 4 Outlet from Eagles Nest Dam recorded 6,350 $\mu\text{S}/\text{cm}$ in 2016; Monitoring Point 7 - Max of 22,600 $\mu\text{S}/\text{cm}$, Mean 4229 $\mu\text{S}/\text{cm}$;
- Market-based economic instruments (Hunter River Salinity Trading Scheme) are used to control Saline discharges from coal mines and power stations in the Hunter Valley. Why hasn’t the EPA introduced a similar scheme for the Coxs R, Cudgegong R, Macquarie River?

Numerous studies over many decades have identified increasing salinity in inland waterways as a seriously major issue, one that is likely to be exacerbated by climate change. In 2000 Chris Burton of the EPA conducted a study of Salinity in the Cudgegong and Macquarie River Catchments.

https://www.researchgate.net/publication/330440178_Assessment_of_Riverine_Salinity_in_the_Macquarie_and_Cudgegong_River_Catchments_19992000. The Macquarie River Valley in particular was identified during the Murray Darling Basin Salinity Audit and the National Action Plan as being highly vulnerable to the impacts of increased salinity in the next fifty years.

The World Health Organization (WHO) desirable upper threshold for Salinity in drinking water is 800 $\mu\text{S}/\text{cm}$. All coal mines above are currently or have in the past discharged minewater well in excess of this 800 $\mu\text{S}/\text{cm}$ threshold into the Cocks River, Macquarie River, and Hunter River catchments.

Platypus rely on electroreceptors on their bill to hunt prey. Salinity disrupts those electroreceptors. A 2022 study found Platypus present at 500 EC but absent at 700 EC. Platypus appear to avoid streams with higher salinity and low dissolved oxygen. [Webb, B., Morrison, K. G., Wright, I. A., & Ryan, M. \(2021\). The effect of water quality, macroinvertebrate assemblages and habitat suitability on the distribution of Platypuses : a pilot study in Cattai Catchment, North West Sydney. *Proceedings Of The 10Th Australian Stream Management Conference, 2 - 4 August 2021, Online, 366-373.*](#)

A 2005 study found the most dramatic shift between groups of macroinvertebrate salinity tolerance occurs as conductivity reaches 800-1000 $\mu\text{S}/\text{cm}$, and this shift seems to be more pronounced in riffle habitat. This threshold value is lower than the generally accepted value of 1500 $\mu\text{S}/\text{cm}$ above which freshwater ecosystems are likely to experience salinity related stress. (Hart et al. 1991) ([Response of stream macroinvertebrates to changes in salinity and the development of a salinity index N. Horrigan, S. Choy, +1 author F. Recknagel Published 20 October 2005. Environmental Science. Marine and Freshwater Research](#))

The lowest salinity in mining-affected creeks in the Lithgow area include State Mine Creek (LEG Site 10), and Farmers Creek (Site 11). <https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>. Salinity appears to stabilise when mines remain flooded.

Why does the EPA place a lower value on Platypus, fish, macroinvertebrates, and other aquatic life in some catchments than in others? Surely Salinity tolerance is the same across the whole of NSW?

Why does the EPA consider that some people in NSW can tolerate higher levels of Salinity in their drinking water than others, despite the World Health Organisation recommending <800 $\mu\text{S}/\text{cm}$?

2.3 Solcenic Fluids

Solcenic water-soluble hydraulic oils are used in vast quantities in longwall mines. These fluids comprise a proprietary formulation of mineral oil, alcohol, poly glycol, inorganic salt, organic acid salt, and triazine biocide. The triazine component acts as a biocide decomposing into **formaldehyde**.

LEG recorded the solcenic spill below at Angus Place Colliery on 11 June 2018. It had not been reported by Centennial to the EPA. Centennial subsequently advised the EPA *"Once observed in Pollution Control Dam No1 an unknown volume was pumped to underground storage"* (ie. dumped down underground mine workings) as was brine waste from the Temporary Reverse Osmosis (RO) plant in 2018 (06_0021 MOD 5). The EPA did not record a non-compliance for this on EPL467.

Previously LEG recorded solcenic fluid discharges into Narrow Swamp, East Wolgan Swamp and hence the Wolgan River from Springvale/Angus Colliery LDP4 & 5.



Photo 15: Solcenic spill Angus Place Colliery – June 2018 Photo 16: Solcenic discharge LDP5 into Wolgan River

Solcenic oils are similar to emulsifiable metal working fluids which have been associated with respiratory disorders, work related asthma, and allergic and irritant skin disorders. The National Pollutant Inventory identifies formaldehyde as *"highly toxic to aquatic life - the fish, shellfish and other creatures in our rivers, lakes, and oceans"*.

National Pollutant Inventory (NPI) 2022/23 data lists 471 facilities as sources of Formaldehyde in Australia, however none are listed in the Lithgow LGA. Coal mines including Benalla, Mount Arthur, Mount Pleasant, Mount Thorley, and Moolarben Mines are listed as formaldehyde sources on the NPI.

Why aren't Springvale and Angus Place longwall mining facilities listed on the NPI? Why have former longwall mining facilities at Baal Bone Colliery and Invincible Colliery not been listed?

In addition, some years ago Pine Dale Mine used formaldehyde-contaminated wood-waste from Borg Panels (chipboard mills) in Oberon for mine site rehabilitation. Where were the EPA???

Why has the EPA not required monitoring for nor set EPL limits for Solcenic, formaldehyde, and other potentially harmful breakdown/decomposition products for Lithgow longwall mines?

2.4 PFAS (Per- and polyfluoroalkyl substances)

PFAS are a group of synthetic organofluorines dubbed 'forever chemicals'. Recent contamination occurred in Medlow Bath and Greaves Creek Dams <https://www.abc.net.au/news/2024-08-28/blue-mountains-dam-medlow-shut-pfas-chemicals/104282482> and the Bellubula River near Cadia Gold Mine <https://www.abc.net.au/news/2024-08-14/farmers-pull-pfos-chemical-from-belubula-river-nsw-pfas/104193746>. Dr Ian Wright recently co-authored a study that found [high levels of the forever chemicals in eight dead platypuses](#) collected from several locations across NSW.

While conducting water monitoring LEG has sighted many instances of frothy water similar to the incident described in the Belubula River, however didn't know the cause? We now suspect PFAS are much more widespread in the Lithgow area, particularly downstream of coal mining/burning premises. The EPA should require regular testing for PFAS on POEO Licences for mines, and set Licence limits.

2.5 PCBs

In 2010 a former mine electrician provided LEG with a long list of names and details of coal miners who developed cancers and/or died prematurely, allegedly due to PCB exposure from leaking transformers used underground. He alleged that transformers and 44 gallon drums of PCBs were not removed after mine closure, but were left underground. The NSW Environment Minister responded that transformer disposal was managed under the national PCB Management Plan 1999. However many of these mines closed long before 1999. Yet another legacy pollution issue involving coal mines. The EPA must require testing for PCBs in minewater at all current and historic mine sites.

'Deadly chemicals buried in drums'

June 6, 2010 <https://www.smh.com.au/national/deadly-chemicals-buried-in-drums-20100605-xlra.html>



Former miner John Hodgkinson. Photo: Anthony Johnson

THE OLD DIGGER

FORMER miner John Hodgkinson is an unlikely whistleblower. But the thought of rusting 44-gallon drums filled with deadly chemicals buried underground and possibly leaching into the water supply has forced him to speak out.

"We seeded the whole area underground. We had no idea how bad it was," Mr Hodgkinson said.

Standing at the mining monument in Lithgow, he listed at least nine mines that had used polychlorinated biphenyls or PCBs as a fireproof coolant in electrical transformers.

"The transformer seals were all cracked so this stuff was leaking out and we were constantly filling them up. Hundreds of 44-gallon drums of the stuff."

The chemicals burnt his skin so he always wore rubber gloves and boots. Others did not bother. They are all dead.

John pulls out a list pages long of the miners he worked with and their illnesses: brain tumour, bowel cancer, testicular cancer.

PCBs are now well-documented as the cause of cancers and were removed from the mines years ago.

But Mr Hodgkinson, now 79 and out of the pits for 20 years, wonders where the drums of chemicals went.

"I was told by one of the site managers that they had built a great big concrete bunker and stored it all in there but I could never find it."

He has also been unable to track down any of the paperwork for disposing of PCBs. He has his suspicions.

"If they were dropped down the old workings those drums will be corroding through now and that stuff will be in our water."

A spokeswoman for NSW Environment Minister Frank Sartor said the disposal of transformers was managed nationally through the federal government PCB Management Plan of 1999.

2.6 Acid Mine Drainage

Acid Mine Drainage/Saline Drainage is a generic pollution issue at many NSW mines. It occurs when iron sulfides disturbed by mining interact with water and air and oxidize. AMD was recorded at Pine Dale Mine in 2004, and Cullen Valley Mine in a 1998 NSW Soil Services report "*Erosion & Sediment Control and Remediation Plan. Wallerawang to Kandos Rail Line at Baal Bone Junction*". Another site occurs in Farley Street Cullen Bullen. It is however rarely identified in EISs for local mining proposals. The EPA must address acid mine drainage issues and place conditions on all EPLs.



Photo 17-23: Acid Mine drainage - Cullen Valley Mine – 12 September 2014



[Wallerawang colliery rehabilitation: the coal tailings briquetting process](#)

Radloff, B.; Kirsten, M.; Anderson, R. *Minerals Engineering* 17(2):153-157. February 2004

The Coal Tailings briquetting process ... as a solidification and stabilization process for the control of acid mine drainage

2.7 Temperature Pollution from Minewater Discharges

LEG has recorded temperatures in minewater discharges up to 14°C warmer than background levels, particularly obvious during winter. This applies equally to power station discharges. eg.

- Springvale/Angus Colliery LDP 4 & 5 – LEG recorded water temperatures of 22°C in winter when local creeks had a water temperature of 8°C, or 14°C warmer. (LEG Site 29 <https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>)
- Invincible Colliery LDP1 – water temperature of 20.1°C on 18/7/2007 when the Coxs River upstream was 7.9°C on 18/7/2007, or 12.2°C warmer. (LEG Site 27 <https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>)
- Wallerawang Power Station No. 8 cooling tower blowdown “Tortuous Watercourse” (LEG Site 23 <https://www.lithgowenvironment.au/docs/leg-streamwatch-database-sep24.pdf>)
- Clarence Colliery – Belmer et al found the LDP2 mine discharge increased water temperature in the Wollangambe River by more than 2.5° C. (*Ian A. Wright, Nakia Belmer & Peter J Davies, ‘Coal Mine Water Pollution and Ecological Impairment of One of Australia’s Most ‘Protected’ High Conservation-Value Rivers’ (2017) 228(3) Water, Air and Soil Pollution.*)

This is of particular concern for the Gardens of Stone State Conservation Area (**Gardens of Stone SCA**) and **GBMWA**, which are cool climate high altitude refuges from climate change for a range of threatened species found nowhere else.

Unnaturally warmed water has direct and indirect impacts on aquatic life. Trout can’t breed in water temperatures above 23°C. Macroinvertebrates, frogs, and skinks are affected. Dissolved oxygen levels are lower, salinity is higher, and algal blooms and disease spread increase in warmer water.

WA has Water Quality Protection Guidelines for Mine dewatering - ‘Discharge water should not cause the receiving water temperature to vary by more than 2°C from its seasonal background temperature’. <https://www.wa.gov.au/system/files/2022-04/WQPG-11-Mine-dewatering.pdf>

The EPA should include similar conditions to WA in all POEO Licences for coal mines in NSW.



Photo 24: Springvale LDP5 Photo 25: Springvale LDP4 Photo 26: Invincible LDP1 Photo 27: Baal Bone LDP3

2.8 Manganese POEO Licence limits in minewater discharges

Clarence Colliery EPL726 had the Filterable Manganese limit raised from 0.05 mg/L to 0.1 mg/L in September 2007, and again to 0.5 mg/L in July 2010. Clarence Colliery had previously been issued with Penalty Notices of \$1500 in 2004 and in 2012 for breaching POEO Licence Manganese limits.

The 0.5 mg/L EPL limit is 10x higher than National Health Medical Research Council recommendations for drinking water, which state that Manganese concentrations "*should not exceed 0.05 mg/L, measured at the customer's tap. Water authorities are encouraged to keep manganese concentrations as low as possible, preferably below 0.02 mg/L. Based on health considerations, the concentration of manganese in drinking water should not exceed 0.1 mg/L. human health guideline limit*".

Clarence Colliery pumps in excess of 15ML/day of partially-treated minewater into the Wollangambe River and GBMWA. The chemical make-up of this minewater is significantly altered compared to natural background levels, with higher salinity, zinc, nickel, manganese, cobalt, and more.

Complaints date back to the 1980s about the slippery black biofilm caused by iron and manganese deposits on rocks downstream from Clarence Colliery in the Wollangambe River and GBMWA.

Lithgow residents have been drinking some of Clarence Colliery's minewater for decades. Centennial are proposing to pump all of this manganese-contaminated minewater to Lake Wallace, and Lithgow will source all its water from there. Why are the EPA and NSW Health allowing this to happen???

2.9 Arsenic POEO Licence limits in minewater discharges

The Australian Drinking Water Guidelines recommend a maximum of 0.01 milligrams per litre of water of Arsenic for health purposes <https://www.nhmrc.gov.au/about-us/publications/australian-drinking-water-guidelines>

Springvale LDP009 recorded several POEO non-compliances on EPL3607 for Arsenic exceedances –

- In 2016 - Minor exceedance of arsenic and EC at LDP 009 on several occasions.
- In 2015 - Copper and arsenic on one occasion at LDP 009.
- In 2014 - Minor exceedance of licence discharge limit for arsenic, EC, Cu & turbidity at LDP 009 on several occasions.
- In 2013 - Minor exceedances of pH, TSS, turbidity, total aluminium, filtered arsenic, filtered copper and zinc concentration limits at various discharge points. EPA issued PIN for turbidity exceedance at LDP 009 on 30 May 2013.

This is disturbing, as LDP9 was discharging into the Coxs River at the time. Even more disturbing is that Angus Place MOD 5 & 8 propose to discharge an additional 10ML/day into Wangcol Creek.

Dr Ian Wright opined that “based on information provided in the Modification Report, and the GHD Water Assessment Report, I have calculated that the arsenic load discharged at LDP001 will increase from <12.88g of arsenic per day under existing conditions, to between 77.28 g/day (scenario 3), 90.16 g/day (scenario 1 and 2). Under all of the future predicted scenarios (from Table 2.3 in GHD Water Assessment Report) the daily load of arsenic released from LDP001 would increase, relative to the existing arsenic load. The concentrations of arsenic in the above three scenarios are above the ANZECC arsenic guideline (trigger value) for 99% protection of aquatic ecosystems (ANZECC, 2000, Table 3.4.1). In my opinion, this would be harmful to stream and river biodiversity.”

The above demonstrates that arsenic exceedances in minewater have occurred, and that arsenic is both a human health as well as an environmental hazard in local waterways.

The EPA should investigate ways to reduce arsenic exceedances, and revise POEO Licence limits.

2.10 Nickel and Zinc

Legacy pollution issues from Canyon Colliery into the Grose River and GBMWHA have been ongoing since mine closure in 1997. Zinc & Nickel levels up to 500 times above guideline limits have been recorded, toxic to macroinvertebrates and aquatic life. Wright, I. and Burgin, S. (2009), 'Comparison of sewage and coal-mine wastes on stream macroinvertebrates within an otherwise clean upland catchment, Southeastern Australia', *Journal of Water, Air and Soil Pollution*, vol 204, no 40634, pp 227 – 241. www.smh.com.au/environment/sustainability/disused-mine-leak-is-killing-life-in-river-20080504-2atg.html



Photo 27-29: Contaminated mine water discharge from Canyon Colliery into Dalpura Creek and GBMWHA – 5 May 2015

Clarence Colliery EPL726 has a 1.5 mg/L total Zinc limit at LDP2, almost 200 times higher than the WQG trigger value of 0.008 mg/L for zinc to protect 95% of species (ANZECC/ARMCANZ 2000).

Despite this obscenely high licence limit, non-compliances for zinc exceedances still occurred at Clarence Colliery in 2017 and 2012, most recently in the August 2024 Enviro Monitoring Report.

There is no EPL limit for Nickel on Clarence Colliery EPL726, despite regular exceedances of the ANZECC limit of 0.011 mg/L, and WHO drinking water guideline limit of 70 µg/L (0.001 mg/L).

This is a serious concern for Lithgow residents, who are forced to drink Clarence Colliery's nickel-contaminated minewater. In 2008 NSW Health released a Public Health Bulletin (*Vol. 19(9–10) 2008 NSW Public Health Bulletin pages 170 – 173*) concerning nickel contamination in drinking water of a fictitious NSW town named "Sampleton". That town was Lithgow. Local GPs had reported outbreaks of dermatitis, eczema, and rashes especially in babies for many years. Nickel-allergic dermatitis is the most likely explanation. Lithgow's basic sand-filter water treatment plant can't remove nickel.

The *Clarence Colliery Discharge Investigation 2015* (Office of Environment & Heritage) identified that the current LDP002 discharge adds annually, on average, 1140 tonnes of salt, 195 tonnes of sulphur, 3 tonnes of iron, 1.8 tonnes of manganese, 440 kg of zinc and 380 kg of nickel to the Wollangambe River.

The EPA approach to this has been, firstly, to allow Clarence Colliery to raise pH levels in the discharge well above naturally acidic background levels. The pH at LDP2 discharge has been up to 9, compared to a natural pH range of 4 - 6. This higher pH locks-up nickel and zinc so it is less soluble, allowing Clarence Colliery to comply with its EPL limit. However as soon as the discharge mixes with naturally acidic water downstream, this nickel and zinc comes out in solution again. At pH 8 zinc levels were 0.12mg/L, but at pH 5 were 255 times higher at 30.6mg/L.

Secondly the EPA are seeking to transfer Clarence Colliery's mine discharge out of the Wollangambe River into the Coxs River and Sydney Drinking Water Catchment. This will create even greater problems, because the Coxs River is already heavily polluted with a cocktail of heavy metals and other contaminants from coal mines, power stations, Wallerawang STP, and other sources. In appeasing one group in one area, the EPA are creating far greater human health risks in another.

EPL licencing should be based on natural conditions of receiving waters. Licencing should include both total and dissolved analysis of water and pollutants in sediment to assess accumulated contamination.

2.11 Boron, Cadmium, Chromium, Fluoride, Hexavalent Chromium, Cobalt, Lead, & Selenium

POEO Licence exceedances for all of the above heavy metals have been recorded at local Lithgow coal mines. LEG could detail each individual contaminant and instance of non-compliance. However the EPA are fully aware of these, because the EPA actually issued those non-compliances.

The question is whether the EPA intend to continue to be permissive of these serious human health and environmental risks to the Lithgow community and NSW public, or will actually take some real action to protect human health and the environment through the POEO licencing process?

2.12 Fish Kills in the Coxs River, Lake Wallace, and Lake Lyell

Numerous fish-kills have occurred in the Coxs, River, Lake Wallace, and Lake Lyell over many years. The standard EPA and Water NSW response is to infer that it was not related to pollution from coal

mines or power stations, but due to 'natural causes'. A gullible public are assured the incident 'will be thoroughly & rigorously investigated', but nothing more is ever heard, until the next time. However that 'next time' may mean extinction for aquatic life and birds feeding on poisoned fish. The EPA can and should do a lot more to protect aquatic life and the environment from pollution, and be more honest with the community rather than just enabling the toxic mining industry to continue to pollute.

2.13 Dumping brine waste and solcenic oils into underground mine workings

In 2018 NSW Planning approved a temporary desalination plant at Angus Place Colliery and disposal of brine waste underground (06_0021 MOD 5). The EPA apparently acquiesced to this appalling decision. Angus Place Colliery have since lodged MOD 5 & 8 proposing to dump this very same minewater untreated into Wangcol Creek and hence the Coxs River. The mind boggles as to why the EPA continue to allow legacy pollution issues such as this to be created???

2. 14 Silcrete - Part B diphenylmethane diisocyanates

Clarence Colliery recently commenced trials spraying a two-part Silcrete compound on the walls and roof of the 908 and 818 Panels. Part B of that Silcrete mix includes diphenylmethane diisocyanates, which the MSDS states 'Do not allow to enter drains' and may be a hazard to aquatic life.

Is this creating yet another legacy groundwater pollution issue that is not being regulated under the current POEO Licence processes?

2.15 Biosolids

There have been several proposals to trial sewage sludge for rehabilitation at open-cut mines sites locally. The mining industry claims everything will be fine, the EPA remain silent, residents are exposed to odours and potential health risks, and water quality and natural environments under threat from nitrogen and phosphate pollution, high alkalinity, increased algal blooms, and more.

Waste disposal companies regard mine sites as a great place to dump all manner of waste. Weak legislation and EPA oversight allow this. The EPA must protect the environment, not industry.

2.16 Cumulative Impacts on Water Resources

NSW Planning routinely approves development applications for coal mining proposals by considering each as a stand-alone project in isolation, failing to take into account cumulative impacts from other coal mines and pollution sources in an area. In terms of cumulative groundwater drawdown in the Gardens of Stone SCA, and cumulative salinity and other pollutant loads in the Sydney drinking water

catchment, failure to assess all point sources of water pollution in previous approvals has led to the many legacy pollution issues which the EPA are now belatedly having to address.

The EPA must stand up to NSW Planning, the coal industry, and vested interests, protect human health and the environment, and make it clear in EPLs that groundwater extraction cannot continue in perpetuity. Once extraction of the coal resource ends, so to must extraction of the groundwater resource. That water is essential to maintain baseflow into rivers, sustain groundwater dependent ecosystems, and allow creeks and swamps desiccated by mining to start to recover post-mining.

2.17 pH or alkalinity pollution

Coal mines routinely raise the pH or alkalinity of mine water to 'lock up' heavy metals and make it appear they have been removed, to comply with their EPL limits. However once that water flows offsite and mixes with naturally acidic water downstream, those heavy metals come into solution again, severely impacting on macroinvertebrates and aquatic life. At Clarence Colliery LDP2 zinc levels were 0.12mg/L at pH 8, but at pH 5 were 255 times higher at 30.6mg/L.

EPL licencing should be based on **natural conditions of receiving waters**, and include both **total and dissolved analysis of water** and **pollutant loads in sediments** to assess accumulated contamination.

3.0 AIR POLLUTION

Current coal mine EPL limits are failing to keep pollutants like nitrogen oxides, sulfur dioxide, particulate matter (PM10 and PM2.5), and mercury within safe boundaries in local communities and environments within proximity to coal mines. Again, the EPA must adopt World Health Organisation air pollution benchmarks, and clean up contaminated environments using its statutory powers.

Research has shown that Australian communities located near coal mines are exposed to significantly higher air pollutants such as nitrogen oxides, metals such as mercury, arsenic and lead as well as PM10 and PM2.5 (coal dust) than non-coal mining communities. (*Hendryx M, Islam MS, Dong GH, Paul G. Air Pollution Emissions 2008-2018 from Australian Coal Mining: Implications for Public and Occupational Health.*) There is clear evidence that no level of air pollution is safe and exposure to fine particles can lead to serious health issues and increase the risk of death.

(<https://www.nejm.org/doi/full/10.1056/NEJM199312093292401>)

Ordinarily air pollution at such levels would give rise to air pollution offences but the licence regime currently protects polluters from prosecutions of those offences. This is a system that is broadly ineffective at protecting the environment and human health. This has resulted in perverse outcomes in Blackmans Flat, for example, such as blasting at two mines within minutes of each other

during temperature inversions or on the same windy days that fly-ash repositories were also blowing dust everywhere. The EPA ought to ensure that measures are in place so that this does not occur.

In August 2024, the United Nations Special Rapporteur handed down a human rights report on toxic coal pollution in Australia. He noted that:

- The pollution generated from coal mines poses serious human rights threats to communities, including communities in the Upper Hunter Valley who are consistently exposed to unsafe levels of pollutants.
- Australian and state air quality standards must be strengthened to align with the World Health Organisation’s air quality standards.
- Communities require real-time monitoring of air pollution. He stated that the current population threshold of 25,000 people is too high for the requirement to install monitoring stations under the Ambient Air Quality National Environment Measure and needs to be decreased especially for areas at high risk of air pollution.

3.1 Particulate air pollution

In the Hunter Valley, public air pollution monitors (eg. PurpleAir) show particulate pollution regularly exceeds legal limits in the most heavily mined parts of the Valley, creating a health hazard for the people who live there. And yet individual mines do not have conditions on their licences that limit the volume of particulate pollution they create. Coal mines also regularly report failure in their air pollution monitoring of air pollution equipment.

Coal mining is the largest contributor of non-road diesel combustion emissions in NSW. In 2015, the EPA published a “benchmarking study” for reducing PM2.5 pollution from non-road diesel at NSW coal mines, promising to introduce a pollution reduction program to tackle this issue, which is also a key source of greenhouse pollution at open cut mines. The initiative was never implemented. In January 2023, the EPA’s Climate Change Action Plan indicated it would be introducing a new “Tier 4” standard for diesel engines at coal mines “in the near future.” This has not happened yet.

Particulate air pollution rises when conditions become windy and warm. There have been nearly 90 air quality alerts in the Upper Hunter so far this year. The EPA has given the coal industry enough time: it must impose volume limits on air pollution that coal mines are made individually and collectively responsible for meeting and it must make the mines pay for their pollution.

1. The EPA must impose load limits for PM 10 and PM 2.5 particulates on all NSW coal mines and conditions of mine EPLs that make them jointly and severally responsible for meeting regional ambient air quality targets;

2. The EPA must impose best practice pollution reduction program on non-road diesel exhausts at all coal mines by the end of 2024;

3. The EPA must make PM10 and PM2.5 assessable pollutants under Schedule 1 of the POEO Act in keeping with the polluter pays principle.

3.2 Coal Combustion/coal reject fires/coal seam fires/underground heating

Cullen Valley Mine (formerly Tyldesley Colliery) has had ongoing coal combustion issues for almost 60 years. Most recently four (4) odour complaints were reported in Castlereagh Coal CCC Minutes of April 2024. <https://ccoal.com.au/wp-content/uploads/2024/06/ccc-minutes-april-2024.pdf>



Photo: Coal waste fire State Mine Gully Photo: Coal seam fire – Cullen Valley Photo: Rehab damaged by coal fire

Incomplete coal combustion generates airborne toxins and pollutants including sulphur dioxide, nitrogen oxides, particulates, PAHs, VOCs, dioxins, furans, mercury, lead, and unpleasant odours. Underground heating also kills vegetation, causes subsidence, and a safety hazard for bushwalkers. NSW Planning continues to approve extensions to this mine claiming these impacts can be managed. But coal combustion hasn't been 'managed' for 60 years, and is unlikely to ever be.

The EPA must call out such fallacies, protect the health of nearby residents, bushwalkers, and the environment by imposing strict EPL conditions, Pollution Reduction Programs, and use Stop Work Orders until coal combustion issues have been satisfactorily resolved.

3.3 Crystalline silica dust

A well-known and well-documented human health hazard, and one that is clearly associated with dust blowing off mines and coal ash repositories. This should be reflected in POEO Licences.

3.4 'The flaw of averages' – real time monitoring required

Monitoring of dust, PM 2.5 & 10, NOX, SOX, PAHs, dioxins and other air pollution at coal mines and coal ash repositories generally only occurs monthly or yearly. Pollution levels are 'averaged out' to

make everything look fine on a particular day, however on bad days levels can be lethal from cumulative sources during Temperature Inversions, droughts, and bushfires. Real-time Monitoring equipment is readily available, inexpensive, and the EPA must require it on all POEO Licences.

4.0 NOISE POLLUTION

Again, coal mines use averaging data to disguise the true situation. Temperature inversions, wind, and cumulative impacts from multiple sources enable one operator to blame another, create doubt and confusion where there isn't any, the EPA's hands are seemingly tied, and residents suffer.

4.1 Infrasound or low-frequency noise

This is an issue that appears to have slipped under the POEO licence radar. In 2014 a very distressed local couple from Lidsdale approached LEG. They had made a 'tree-change' to a small acreage in Lidsdale and were poultry enthusiasts, planning to breed prize-winning birds for show. However their chickens had lower egg production than in Sydney, stunted growth, failed to breed, and died prematurely. Both suffered from tinnitus, headaches, fatigue, dizziness, and nausea. Ultimately these health conditions became so severe that they had no choice but to sell-up and leave the area.

They believed that the noise or infrasound was coming from the nearby Springvale – Mount Piper Coal Conveyor about 250m away, or perhaps Springvale Airvent, both of which operate 24 hours per day. Whilst Centennial did investigate, they failed to provide a conclusive answer or take any action, and appeared to try and deflect blame onto Mount Piper Power Station over 6km away and behind a hill.


Noise Monitoring – Clarence and Springvale Collieries
Centennial Coal Company Limited Page 44 of 44

There is potential for the 16Hz component at the Springvale Colliery (elevated conveyors?) to impact the Lidsdale residents which should be the subject of on-off testing.

From our investigation at both collieries we do not see that there is any other significant noise sources that would lead to the complaints that have been identified.

The complexity of looking into the complaints did cause some difficulty with obtaining data and reporting from the residents. It must be acknowledged that the residents found it to be a difficult process to describe the impacts that they are receiving on an ongoing basis and convey the disturbances in a method that would have some meaning.

The patience of the residents and Centennial Coal in the time that has been required to investigate, analyse and decipher the data that has been obtained must be acknowledged. It is as a result of the analysis of the work carried out in 2014 that did not find a conclusive answer that required additional measurements in 2015 that included what is a significant and should be an obvious source of noise being the Mount Piper Power Station.

Yours Faithfully,
THE ACOUSTIC GROUP PTY LTD

STEVEN E. COOPER

Once again, this issue demonstrates how, in a cumulatively impacted coal mining & burning area, one Premises tries to deflect blame onto another; creates doubt and confusion where there isn't any; obfuscates; denies; defers; and delays in the hope a complainant gives up and goes away and its business-as-usual until the next complaint. But where were the EPA and the POEO Licencing system?

5.0 HISTORY OF FAILING TO REPORT MUST BE WEIGHTED HEAVILY IN FIT AND PROPER PERSON CONSIDERATIONS

The EPA has a statutory requirement to consider 'fit and proper' considerations when issuing, or suspending of licences.

This s 83 PEO Act power has been underutilised by the EPA and proponents with histories of poor compliance with environmental or other relevant legislation has not been appropriately weighted in fit and proper person decisions.

This is an important statutory lever of the EPA and we urge the EPA to send a strong message to proponents who either repeatedly or significantly breach legislation that causes great environmental harm.

5.1 Failure to record/report threatened species

LEG has on numerous occasions recorded Threatened Species listed under the EPBC Act and/or NSW BCA in active mine leases which had not been recorded/reported in EISs or other planning documents.

In April 2011 LEG recorded *Persoonia marginata* (Vulnerable EPBC, NSW BCA) at Cullen Valley Mine. Neither Coalpac nor prior owners of Cullen Valley Mine had reported it in EPBC Referrals to the Commonwealth; Preliminary Coalpac application 2010; Flora Assessments for Exploration Program (Borehole CP113 to CP129) February 2010; Flora Surveys for Cullen Valley Lease Extension (DA-200-5-2003) April 2003; or Flora Surveys for Feldmast Coal Project in 1997, in breach of the EPBC and BCA. *Persoonia marginata* also occurs in the Baal Bone Colliery mine lease, and wasn't recorded or reported in numerous EISs or Planning documents over many decades for that mine either.

LEG reported this to the Commonwealth and OEH. Whilst the EPA did investigate and issued a stop-work order, no prosecutions or non-compliances were ever issued.

In 2018 when the Angus Place (06_0021 MOD 5) proposal was open for comment, LEG notified NSW Planning that Centennial's documentation had not identified nationally endangered Temperate Highland Peat Swamps on Sandstone (THPSS), nor the Threatened Species *Pultenaea glabra* (Vulnerable EPBC Act & NSW BCA), *Kunzea cabbagei* (Vulnerable EPBC Act & NSW BCA), *Xerochrysum palustre* (Vulnerable EPBC Act), *Eucalyptus aggregata* (Vulnerable EPBC Act & NSW

BCA), *Eucalyptus cannonii* (Vulnerable EPBC Act & NSW BCA), *Veronica blakelyi* (Endangered NSW BCA), *Eulamprus leuraensis* (Blue Mountains Water Skink) – Endangered EPBC Act & NSW BCA, or *Petalura gigantea* (Giant Dragonfly) Endangered NSW BCA. NSW Planning ignored LEGs concerns.

In the Clarence Colliery Mine lease, LEG recently recorded *Pultenaea glabra* (Vulnerable – EPBC & NSW BCA). Previously we recorded other threatened species which had not, at that time, been recorded or reported by Centennial including *Hibbertia cistiflora subsp. quadristaminea* (Endangered EPBC Act); *Xerochrysum palustre* (Vulnerable EPBC Act); *Prasophyllum pallens* (Vulnerable NSW BCA) *Persoonia acerosa* (Vulnerable NSW BCA); *Caesia parviflora var. minor* (Endangered NSW BCA); *Genoplesium superbum* (Endangered NSW BCA); and *Veronica blakelyi* (Endangered NSW BCA).

There are more examples, however the point being that these coal mines and their Flora Consultants contravened the EPBC Act and/or NSW BCA on multiple occasions in multiple EISs and other Planning documents over many decades by failing to notify the relevant government departments of Threatened Species occurring on their Mine Leases that were at risk from mining operations.

Why are these breaches never considered in s 83 decisions?

5.2 Failure to report Aboriginal heritage sites

LEG and the www.bushexplorers.com.au/ recorded two Aboriginal Heritage sites in the Coalpac Mine Lease which the company failed to identify in the Aboriginal Archaeology and Cultural Heritage Impact Assessment 2012 (<https://www.abc.net.au/news/rural/2014-07-25/coalpac-rock-art/5624222>). On 18 August 2016 Centennial Charbon Colliery was fined \$175,000 for damage to Indigenous Heritage site CH-OS6. <https://www.caselaw.nsw.gov.au/decision/57b40401e4b0e71e17f53731>

This is an ongoing issue with coal mines in Lithgow region – failure to record/report Aboriginal Heritage in breach of the *National Parks and Wildlife (NPW) Act 1974*.

Again, why are these breaches never considered in s 83 decisions?



Photo 30: Aunty Helen Riley – Cave Art site Cullen Valley Mine

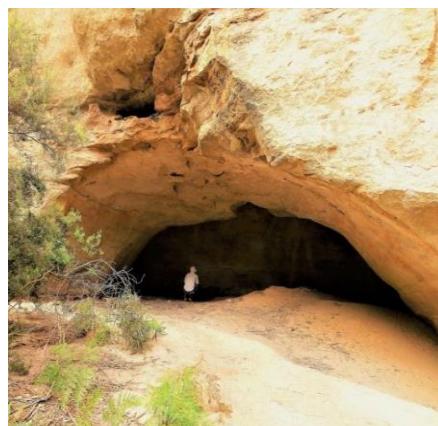


Photo 31: Cave Art site – Invincible Colliery

6.0 POLLUTER PAYS REGIME

Coal mining operations are among the largest sources of pollution in NSW. However, coal mine operators are not required to pay for the pollution that they produce.

Load-based licensing, or the 'polluter pays' system, require industries to pay fees based on the amount of pollution that they release. This system has been successfully implemented in other sectors, like coal-fired power plants, to encourage corporate responsibility. The EPA has recognised the importance of this scheme as a “fairer system that rewards cleaner industry,” but has not prioritised its roll out in NSW coal mine regulation.

In 2016, the EPA began a review of the state’s “load-based licencing” scheme, and it was proposed for the first time to include coal mines in the scheme, but the review was dropped after outcry from the coal industry, despite it being the largest commercial source of particulate pollution in NSW.

Data from the National Pollutant Inventory (NPI) from 2008-2018 showed that coal mines accounted for 42.1% of national PM10 air emissions from NPI sites. PM2.5 from coal mines accounted for 19.5% of the national total, metals for 12.1%, and nitrogen oxides for 10.1%. (*Hendryx M, Islam MS, Dong GH, Paul G. Air Pollution Emissions 2008-2018 from Australian Coal Mining: Implications for Public and Occupational Health. Int J Environ Res Public Health. 2020 Feb 29;17(5):1570.*)

The EPA should require coal mines to pay load base fees for air and water pollutants including:

- Air pollutants: Coarse particulates (PM10), Fine particulates (PM2.5), nitrogen oxides, lead, mercury, arsenic, sulfur oxides, benzopyrene, carbon monoxide, carbon dioxide (CO₂) and methane
- Water pollutants: salt, nickel, zinc, arsenic, copper, lead, mercury, fluoride, oil and grease, suspended solids, boron, cobalt and selenium.

7.0 INDEPENDENT AND REAL TIME MONITORING

It is essential for environmental monitoring and pollution data to be publicly available to empower community action, enhance transparency between operators and the public, and build community trust. Yet currently, operators are not required to disclose their monitoring results.

This is alarming because the National Anti-Corruption Commission has flagged the environmental sector as susceptible to corruption, and the NSW Audit Office has expressed concerns about the EPA’s reliance on self-reported information from operators, which can lead to non-compliance.

LEG believes the EPA should:

- Require operators to publicly and in real-time share information on community concerns, such as air pollution, water contamination, and incidents.
- Expand the monitoring of Camp Gully Creek in Illawarra to other water bodies receiving wastewater from coal mines.
- Mandate the public disclosure of all licence reporting.
- Conduct its own audits and monitoring of coal mines, given recent concerns about conflicts of interest, fraud, and lack of transparency in the consulting industry.

Tony Chappel was reported in a SMH article on 20 May 2024 on New Rules for NSW Polluters to require 'credible' plan for mitigating climate impact –

“Developers’ environmental impact statements in the past had often been “using emission factors which have been found to be significantly inaccurate” he said, adding that independent third-party verification will be needed “every step of the way”. “We can’t regulate if we don’t have clarity of the data”, Chappel said. “We can’t have the data if the proponent isn’t doing the rigorous work on making that data available”.

LEG believes that the above statement should be compulsory reading for every public servant in NSW Planning. Because it clearly sums up what has been happening in mining areas for decades.

“It is difficult to get a man to understand something when his salary depends on his not understanding it”. The EPA have been unable to effectively regulate the powerful mining industry and meanwhile communities and the environment continue to suffer.

7.1 Legacy of failure to report incidents reflects a broken system

Numerous examples above demonstrate that LEG, local residents, bushwalkers, and the community reported incidents of environmental harm which had not been reported by mining companies.

In numerous reports and submissions lodged by LEG to government departments over many years we provided detailed examples of damage to nationally endangered swamps, cliff falls, subsidence cracks, severe channelisation and erosion, water pollution, solcenic oil spills, damage or loss of threatened species, and much more which had not been recorded/reported by mining companies.

More often than not pollution incidents occur after-hours, on weekends, or public holidays. By the time the EPA can inspect, the pollution has cleared up. Regardless of whether this is done intentionally, penalties should apply for every day an incident goes unreported, not just the day the EPA sighted it.

Surely the EPA must do more to require POEO Licencees to report incidents of environmental harm, or face severe penalties? Waiting for complaints from locals is too little too late, and poor practice.

8.0 BURIAL OF TYRES ON MINE SITES

Many mine EPLs allow the burial of mine truck tyres on mine sites. Apart from creating yet more legacy environmental liabilities, surely these tyres are a valuable resource which can be recycled?

Surely the EPA has some powers under the POEO Act, Contaminated Land Management Act, Circular Economy Act, Waste Management Act, or similar requiring mines to behave responsibly???

9.0 METHANE

Methane is a potent short-lived greenhouse gas. Deep reductions in methane pollution before 2030 will buy time to keep the Paris temperature goals in reach. The IEA has estimated that to stay on track to prevent global average warming above 1.5 degrees, methane emissions from coal and gas operations need to reduce 75% by 2030.

Methane is 82.5 times more powerful than CO₂ as a greenhouse gas over a 20-year period. Because it is so potent and acts quickly, reducing methane emissions is crucial for tackling the climate crisis. Coal mining is a major source of methane, contributing up to 12% of global emissions, with Australia being a significant contributor.

Alarmingly, the full extent of methane's impact is not well understood because leaks from coal mines are not being monitored.

When the EPA released its draft Climate Change Action Plan in September 2022, it indicated it was going to impose “targets and enforceable emissions reduction limits for polluters on greenhouse gas emissions” with a particular focus on fugitive methane emissions from coal mines. No such targets, limits or inclusion of methane mitigation in coal mine licenses has occurred since. In January 2023, the action plan was finalised and committed the EPA to setting sectoral emissions reduction targets, putting greenhouse gas limits on pollution licenses and regulating short-lived climate pollutants like methane through its licences within 2 years. None of these things have been done.

The agency set up a mining industry advisory group in late 2023, but details of proposed Climate Change Adaptation and Mitigation Plans for licencees are yet to be released.

- a. The EPA should adopt a policy of pursuing 75% reduction in coal mine methane by 2030, and use its Environment Protection Licences and Load-based licencing scheme to achieve this.
- b. Implement best practice technology to minimise methane leaks and identify, monitor, disclose, and quickly address methane leaks

- c. The EPA must immediately impose pollution reduction programs on each coal mining facility -
- For underground mines, requiring them, by the end of 2026 to install VAM abatement and, by the end of 2024, to ban all direct venting of methane.
 - For open cut mines, requiring them, by mid-2025 to implement pre-mine drainage for all mining areas and, by mid-2025, to implement controls on diesel use that achieve meaningful and measurable abatement.
 - Failing the above programs, for each facility to adjust its level of production to achieve the necessary emissions reductions.
- d. The EPA must make methane an assessable pollutant for coal mining under Schedule 1 of the Protection of the Environment Operations Act in keeping with the polluter pays principle.

10. CREDIBLE PLANNING FOR MITIGATING CLIMATE IMPACTS

There are currently no licence conditions that regulate greenhouse gas emissions, despite the EPA citing its intention to do so.

LEG believes the EPA should establish climate change mitigation and adaptation plans that:

- Set emission limits (particularly on CO₂ and methane) and require operators to regularly report on these to ensure transparency.

Require operators to:

- Adopt measures for reducing emissions to meet NSW climate targets;
- Investigate and publish reports on how to phase down emissions;
- Identify technically feasible, best-practice technologies to reduce climate pollution;
- Provide progress updates on their investigations and detail actions taken to implement the identified measures.

11. ENFORCEMENT

Licence conditions only protect human health and the environment if the EPA monitors and enforces them. However, a 2018 audit found that the EPA doesn't have a consistent approach, meaning that it can't be sure it's enforcing the licence requirements evenly across the state or that mining companies are following their licence requirements.

Where the EPA uncovers licence breaches, it must be required to undertake timely and proportionate actions including prosecution.

11.1 Statutory powers underutilised

The EPA has significant powers to encourage best practice and appropriately punish proponents when there are breaches of the law. Under the POEO Act this includes:

- Issuing of preliminary investigations notices – s 90B
- Recovering of costs of preliminary investigations – s 90H
- Issuing clean up notices to polluters – s 91
- Requiring compliance with a clean up notice – 91B
- Take preventative action to avoid an environmentally unsatisfactory activity – s 96
- Offence for failing to notify the EPA about a pollution incident – s 152
- Offence relating to disposal of waste – s 115
- Offence relating to leaks, spillages and other escapes – s 116

The EPA must use its statutory powers in a way that accords with community expectations and a robust regulatory response. Resourcing cannot be cited as a prohibitive factor when the EPA can recover its costs from polluters.

The EPA must establish a hierarchy of the worst recidivist offenders, classified based on the number of unreported incidents of environmental harm, POEO Licence non-compliances, complaints, or other such mechanisms. These Premises should then be subjected to more rigorous levels of scrutiny, and be required to pay for the additional EPA inspections and investigation costs on a cost recovery basis.

11.2 Weak regulatory responses fail to deter repeat polluters

For example below is a history of POEO Licence non-compliances, prosecutions, penalty notices, enforceable undertakings, and prevention notices for just one company in the Lithgow region –

Centennial – 1999 to 2023 (last update 11 August 2024)

- **1434** POEO Licence non-compliances at 7 sites (<https://apps.epa.nsw.gov.au/prpoeoapp/>) -
 - Airly Mine – **6** POEO Licence non-compliances on EPL12374 from 2010-2023;
 - Angus Place Colliery – **139** POEO Licence non-compliances on EPL467 from 2000-2023;
 - Charbon Colliery – **45** POEO Licence non-compliances on EPL528 from 1999-2021;
 - Clarence Colliery - **156** POEO Licence non-compliances on EPL726 from 2000 – 2023;
 - Lidsdale Coal Loading Facility – **40** POEO Licence non-compliances on EPL5129, 1999-2023;
 - Springvale Colliery – **1,027** POEO Licence non-compliances on EPL3607 from 2000-2023;
 - Western Coal Services – **21** POEO Licence non-compliances on EPL21229 from 2019-2023;

- Prevention Notice & Clean-up Notice, Clarence Colliery. On 22 December 2023 EPA officers sighted turbid water discharging from the Premises via the Main Dam and into the Wollangambe River. The EPA also suspected there was a build-up of coal fines/coal material in the Polishing Lagoon, and Main Dam. Reported by LEG, not by Centennial.
<https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=726>
- Enforceable Undertaking: \$150,000. Airly Mine. In 2022 Centennial breached its Development Consent causing major irreversible fractures in the Mugii Murum-ban State Conservation Area. The Department of Planning & Environment imposed a \$150,000 Enforceable Undertaking on Centennial. The company has since mined outside its approved area, which is a Class 1 reportable offence under the NSW EP&A Act.
<https://www.planning.nsw.gov.au/sites/default/files/2023-02/signed-enforceable-undertaking-by-centennial-airly-pty-ltd.pdf>
- Enforceable Undertaking: \$1,217,336.50, Clarence Colliery, 9 August 2024. On 2 November 2021 two workers at Clarence Colliery suffered serious injuries including multiple spinal fractures when struck by falling roof material. Clarence Coal must spend a minimum of \$1,217,336.50, excluding GST. <https://www.resourcesregulator.nsw.gov.au/news-articles/whs-undertaking-accepted-from-clarence-coal-pty-limited>
<https://www.resourcesregulator.nsw.gov.au/sites/default/files/2024-08/enforceable-undertaking-clarence-coal-redacted.pdf>
- Penalty - 6 March 2018 - Springvale Colliery was fined \$15,000 by DPIE for causing significant vegetation damage in Sunnyside Swamp.
<https://www.planning.nsw.gov.au/News/2018/Department-fines-Springvale-Coal-Mine-for-environmental-damage>
- Prosecution 2017 - \$1,050,000. Clarence Colliery. EPA prosecuted Centennial after Coal Reject Emplacement Area (REA) 3 spilled 2,330 tonnes of coal-fines into the Wollangambe River and caused damage within the Greater Blue Mountains World Heritage Area (GBMWhA). <https://www.epa.nsw.gov.au/newsletters/epa-connect-newsletter/spring-october-2017/coal-spill-into-world-heritage-area-costs-clarence-colliery-more-than-3-million>
- Prosecution - \$175,000 - 18 August 2016 - Centennial Charbon Colliery was fined \$175,000 for damage to the location of Indigenous Heritage site CH-OS6.
<https://www.caselaw.nsw.gov.au/decision/57b40401e4b0e71e17f53731>

- Penalty Notice - \$15,000, Springvale Colliery. In 2015 Centennial was fined \$15,000 when toxic coal sludge was illegally discharged from Springvale Colliery sediment storage ponds into downstream wetlands. <http://www.medianet.com.au/releases/release-details/?id=822290>
- Penalty Notice 3085772169. 30 May 2013 – Springvale Colliery EPL3607 - Contravene of Part 5 pt 7 of the Protection of the Environment Operations Act 1997 – Corporation. <https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=3607&id=1516815&option=notice&range=POEO%20licence¬icetype=>
- Penalty Notice 3085772178. 30 May 2013 – Springvale Colliery EPL3607 - Contravene any condition of licence - not noise – corporation. <https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=3607&id=1516817&option=notice&range=POEO%20licence¬icetype=>
- Penalty Notice 3085769620. 19 March 2013 – Charbon Colliery EPL528 - Contravene any condition of licence relating to noise – corporation. <https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=528&id=1512944&option=notice&range=POEO%20licence¬icetype=>
- Penalty Notice, 26 March 2012. Clarence Colliery breached its manganese limit as the treatment plant couldn't cope with increased minewater inflow. The mine was fined \$1500. <https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=726&id=1509912&option=notice&range=POEO%20licence¬icetype=>
- Enforceable Undertaking: \$1,450,000. In 2011 Centennial Angus Place & Springvale Mines acknowledged that the Federal Environment Minister considered its mining operations had significantly impacted upon Temperate Highland Peat Swamps on Sandstone (THPSS) in Narrow Swamp, East Wolgan Swamp, and Junction Swamp. Centennial entered into a \$1.45 million Enforceable Undertaking under s486DA of the EPBC Act. These swamps have not recovered. <http://laptop.deh.gov.au/about/media/dept-mr/dept-mr20111021.html>
- 2 February 2010 - Angus Place Colliery was convicted and fined \$288,000 plus costs in the Industrial Court of NSW after a fatality at the mine. <https://www.caselaw.nsw.gov.au/decision/549f77c83004262463a89ccf>

- 25 October 2010 - Centennial Newstan P/L. Pollute Waters. Ordered to pay \$105,000 to Lake Macquarie City Council for an Ecosystem Enhancement Operations Program and publicise details of the offence in the Sydney Morning Herald and Newcastle Herald. Also ordered to pay investigation costs of \$10,000.
<https://apps.epa.nsw.gov.au/casesapp/ProsecutionDetails.aspx>
- 30 November 2007 - Clarence Coal P/L and Centennial Coal Company Ltd were each fined \$80,000 under the OH&S Act after a worker received serious injuries resulting in paraplegia.
<https://www.caselaw.nsw.gov.au/decision/549f81113004262463ab2c92>
- 31 October 2006 – Centennial Newstan P/L. Pollute waters. Ordered to pay \$50,000 for works toward rehabilitating LT Creek at Fassifern and publicise details of the offence in the Sydney Morning Herald and Newcastle Herald.
<https://apps.epa.nsw.gov.au/casesapp/ProsecutionDetails.aspx>
- November 2004 - EPA issued Clarence Colliery with a Penalty Notice and \$1500 fine for breaching the filterable manganese limit of EPL726 on 18 October 2004.
<https://apps.epa.nsw.gov.au/prpoeoapp/>
- 1981 - during construction of the main storage dam and polishing dam, Clarence Colliery was prosecuted by the State Pollution Control Commission (SPCC) for failing to prevent water pollution of the Wollangambe River.

The EPA must be more proactive, must get out into these mining areas and see what is really going on, and implement a cost-recovery process requiring POEO Licencee's to pay for the EPAs investigations.

11.3 Subsidence damage caused by longwall mining to upland peat swamps must be a focus area

The impacts caused by subsidence damage can be significant and irreversible. The EPA needs to ensure that subsidence damage is avoided, but when it is caused that appropriate management of environmental consequences are taken including proportionate prosecution.

Recent research in the Illawarra has shown that longwall mining can cause rapid water loss and drying of downstream pools. (<https://www.abc.net.au/news/2024-08-27/longwall-mining-causes-irreversible-damage-illawarra-water/104255888>). This news report revealed that subsidence impacts in the Illawarra did not breach the mining conditions despite likely irreversible environmental impacts and impacts on the drinking water catchment.

Subsidence issues have also featured prominently for Lithgow underground coal mining. This includes:

- East Wolgan Swamp was one of the damaged swamps subject to the Federal Government \$1.45 million Enforceable Undertaking in 2011.
- Severe erosion damage to Narrow Swamp and Cliff collapse reported in Western Region CCC Minutes of August 2022, again one of the damaged swamps subject to the \$1.45 million Enforceable Undertaking in 2011.
- Alteration of habitat following subsidence due to longwall mining - Key Threatening process". EPBC Act Listing 2005 <https://www.environment.nsw.gov>
- Mine dewatering increases subsidence impacts, Lithgow City Council Minutes 20 September 2010, and Lithgow Mercury article on 22 September 2010. <http://www.lithgowmercury.com.au/news/local/news/general/a-watery-grave/1949152.aspx>

LEG reiterates the concerns from the 'Impacts of coal mining on the Gardens of Stone' report by Keith Muir in 2010 ([impact_of_coal_mining_on_gos2_final.pdf \(nationbuilder.com\)](#)) particularly noting:

The most beautiful parts of the Blue Mountains and the headwaters of Sydney's drinking water catchment should not be degraded so that the mining industry can meet its profit targets. Such intensive mining is unfair on future generations. The 2004 policy framework for subsidence management has been a failure from the outset and needs extensive amendment, particularly in relation to how environmental protection is secured.

Management of subsidence damage that does not adapt to ensure environment protection, is no management at all. Monitoring that fails to observe and adequately report obvious swamp and stream damage, is not monitoring but obfuscation. Monitoring the maximum cliff and pagoda damage of the noble Gardens of Stone landscape is a perversion masquerading as science.

To lower water quality standards to allow the pollution of drinking water supplies and wild rivers with hazardous metals, borders on collective insanity.

...

The sum of thirty years of disregard, obfuscation and bungling in the Gardens of Stone gives just one snapshot of how the coal mining industry has earned its thoroughly deserved reputation for environmental abuse.

Subsidence Management Plans are exact only in estimating levels of land surface movement along certain survey lines. The impacts caused by this subsidence on

near-surface groundwater levels, swamps and even predictions of surface cracking, are very poorly estimated and often underestimated.

In light of the known risks of subsidence damage caused by coal mining and their severity if they occur, LEG recommends that the EPA:

- Establish subsidence protection zones around all important geological, ecological or cultural features, including vulnerable features like streams, swamps, cliffs and rock overhangs. These protection measures should be made mandatory for current, as well as future longwall mining operations, effective immediately.
- Mandate adequate surface flow and near-surface groundwater monitoring in Subsidence Management Plan areas to create a comprehensive picture of these water systems and how these systems are affected by mining over time.
- Only enable mining that does not impact upon a catchment's capacity to collect or convey water and does not cause pollution
- Where companies are in violation of legislation, fines need to be imposed that are much greater than the cost of remediation measures, noting that damage caused by subsidence impact may irreversible

CONCLUSION

Government, Council, Unions and Industry have historically denied, lied, and covered-up inconvenient truths about coal mining in the Lithgow region to fit their 'economic benefits' dialog. All routinely ignore cumulative impacts, offsite minewater pollution, threatened species, aboriginal heritage, legacy mining issues, post-mining impacts, the non-compliance culture, and take the drug dealers defence on emissions, whilst forever increasing mining intensity, extraction ratios, and the severity of impacts.

The EPA must remain independent, provide frank and fearless scientifically-sound advice, and demonstrate to the community that they have tried to do so when over-ruled by vested interests. The EPA must stay true to its core role of Protecting Human Health and the Environment.

Increasing public awareness and independent community-based monitoring such as PurpleAir, DustWatch, Water Watch, Streamwatch, iNaturalist, NatureMapr, Biocollect, FrogID, PlatypusWatch, and many more continue to show that people are losing trust and faith in government and industry.

One of the great failings of the EPA is not using the powers it has been granted by parliament to their full extent. The EPA needs to strongly regulate the highly polluting coal mining industry by using such powers as:

- Mandating licence conditions which bring coal mines within safe pollution limits for human health and the environment,
- Issuing clean up notices and pollution reduction programs,
- Meaningfully considering the fit and proper person test in the context of licences,
- Investigating non-compliance and proceeding with prosecutions for breaches.

Mining should be brought into the Load Based Licence Scheme, because it is by far the major source of PM10 Particulate pollution in NSW. Coal mining should be included because licence discharge points are by far the largest point sources of salt and metal pollution into waterways. The regulation of coal mines must respond to a changing climate and embrace new technologies and approaches to reduce climate impacts.

These goals are achievable. The health and environmental costs of coal mining has been worn by local communities for hundreds of years. We find ourselves in the critical decade to respond to climate change. This review of the Regulation of NSW coal mine POEO licences provides an ideal opportunity for the EPA to address these long-standing problems. LEG hopes that the EPA will not miss that opportunity.

Yours sincerely

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