



Goulburn River Stone Cottages

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Regulatory Reform and Advice Branch
Environment Protection Authority
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Submission to Load-based Licensing Scheme Review

Dear Sir/Madam,

I am currently involved in post graduate research into water resources in the Hunter and neighbours to a large coal mining complex (Ulan CML, Moolarben Coal Complex and Wilpinjong Coal Mine). The interception and contamination of surface and groundwater by mining operations in this area produces substantial volumes of elevated saline waste water. Coal mines discharging mine water to the Goulburn River are only required to monitor salinity, pH and turbidity with testing for oil, grease, zinc and iron from selected discharge points. A range of other potential pollutants are not regulated or publically reported. The Goulburn River is not part of the Hunter River Salinity Trading Scheme.

Based on the analysis of monthly stream discharge and salinity (EC) data (2012 – 2016 Coggan GS210006) to maintain salinity Electrical Conductivity below 900 $\mu\text{S}/\text{cm}$ in the Goulburn River would require a flow greater than 6,000 Million litres per month equivalent to the 87th percentile flow. Direct discharge and indirect seepage of mine waste water containing elevated salts are contributing to salt loads in the Goulburn River. Modelling predicts the volume of mine discharge water will exceed 28 Million litres per day by 2023, with a salt load of over 14 tonnes per day (5,000 tonne per year). As the Goulburn is unregulated there are limited dilution factors available and the cumulative impact on water quality from the expanding coal industry in the headwaters of the Goulburn River must be taken into account. The Hunter Catchment Salinity Assessment Final Report recommended further investigation into the environmental effects of mine discharge water into the Hunter River and tributary Goulburn River (Krogh *et al.*, 2013). For discharge of saline water and interaction of its constituents including elevated levels of sodium bicarbonate, metals, metalloids and non-metallic inorganic constituents.

Coal mining should be held financially and socially responsible for pollutants released during and post mining. A Load-based Licensing (LBL) Scheme aimed at regulating and reducing pollution by the inclusion, monitoring and regulation of toxicants and other stressors contained in mine discharge water would encourage better practice, and social responsibility. Turbid discharges of eroded sediments in mine runoff that flow into creeks and rivers should also be included.

Industry payments could help fund independent investigations into key areas such as the impact of changes in river water chemistry on aquatic invertebrates (e.g. stygofauna) that play a vital role in maintaining the function of the hyporheic zone, health and resilience of river ecosystem.

Coal mining is also a major contributor of air pollutants including PM₁₀, PM_{2.5}, particles, VOCs, arsenic, PAHs and NO_x and methane. These should be included as assessable pollutants from coal mining. With no national price on carbon the EPA should consider the inclusion of carbon dioxide and methane as assessable pollutants for coal mining and electricity generation.

Yours sincerely,

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Krogh, M., Dorani, F., Foulsham, E., McSorley, A. and Hoey, D., 2013. *Hunter Catchment Salinity Assessment: Final Report*, Report prepared by Office of Environment and Heritage for the NSW Environmental Protection Agency Sydney, Australia. Available at: www.epa.nsw.au (accessed 20/12/2013).